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UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1913: NO. 10 - - - - - - - - WHOLE NUMBER 517

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

INTRODUCTORY NOTES.

Among the books and articles listed in the present bulletin, the following may be noted for special attention: Gilbert, What children study and why; Heck, Study of mental fatigue; Seerley, The country school; Holland, Pennsylvania state normal schools; Kendall, Training of high school teachers; Hart, Western types of higher education; Maxwell, Attitude of American parent toward education; Gulick and Ayres, Medical inspection of schools, revised edition; Perry, Survey of school social centers; Cocley, Problem of establishing vocational schools; Münsterberg, Psychology and industrial efficiency; Prosser, Practical arts and vocational guidance. Titles of three publications relating to the peace propaganda are included, namely, American peace congress, Proceedings; American school peace league, Yearbook; Moritzen, Peace movement of America.

The Committee on school inquiry of the Board of estimate and apportionment of the city of New York is publishing in successive volumes the reports of its specialists on educational aspects of the inquiry. The following 6 volumes of the series have appeared:

Introduction and conclusion of Report as a whole, as prepared by Prof. Paul H. Hanus, specialist in charge. 16 p.

Elementary schools: Sections A, B, C—Quality of classroom instruction, Course of study, Supervision by the principals; by Frank M. McMurry. viii, 150 p. Section E—Ungraded classes, by Henry H. Goddard. iv, 23 p. Section F—III. Promotions and nonpromotion, and part time, by Frank P. Bachman. vii, 114 p. IV. The compulsory attendance service, by Jesse D. Burks. v, 75 p.

The system of general supervision and the Board of examiners, by Edward C. Elliott. xiii, 144 p.

Each special monograph is introduced by a summary by Prof. Hanus, extracted from the Report as a whole. The Committee estimates that the entire series of reports by 11 specialists will comprise approximately 1,400 pages.

Announcement is made that Prof. Ernest C. Moore's report on the Board of education and the local school boards, which was not accepted by the Committee on school inquiry, is now available in full as an independently published monograph.

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The record of American book production for 1912, as presented by the Publishers' weekly of January 25, 1913, shows in education a yearly total of 251 new books and 3 new editions, as against 289 new books and 11 new editions in 1911, and 504 and 19 respectively in 1910. From international statistics given in the same periodical, it appears that in Great Britain 311 books on educational theory and practice were published in 1912, and 250 in 1911.

PUBLICATIONS OF ASSOCIATIONS.

298. **American peace congress.** Proceedings of the third American peace congress, held in Baltimore, Md., May 3 to 6, 1911. [Baltimore, Md., Williams & Wilkins company, 1912?] 504 p. 8°. (Tunstall Smith, executive secretary, Baltimore, Md.)

Contains: 1. C. F. Thwing: The peace movement and the American college and university, p. 54–58. 2. T. S. Baker: Education and the peace movement, p. 88–95. 3. F. W. Boatwright: The college and arbitration, p. 173–76. 4. Fannie F. Andrews: Education and international peace, p. 267–75. 5. S. P. Brooks: The schoolroom in the peace propaganda, p. 324–30. 6. Isaac Sharpless: The education of peace men, p. 346–53. 7. Lucia A. Mead: Address to teachers of Maryland, p. 472–81.

299. **American school peace league.** Year book, 1911–1912. 104 p. 8°. (Mrs. Fannie F. Andrews, secretary, 405 Marlborough Street, Boston, Mass.)

Contains: Margaret E. Foster: The opportunity and duty of the schools in the International peace movement, p. 74–84.

300. **Association for the international interchange of students.** Report, 1912 . . . containing the report of the first International conference at the termination of the experimental period, 1909–1912. Ed. by H. W. Crees. London, Association for the international interchange of students, 1912. 252 p. 8°.

Contains: 1. H. W. Crees: The methods and work of the Association, p. 40–53. 2. P. J. Godber: Advantages derived from a special technical tour through Canada and the United States, p. 67–68. 3. T. M. Parrott: The Association in the United States, p. 86–88. 4. H. W. Crees: Outline of the work for the future, p. 98–106. 5. Student travellers' reports, p. 159–250.

301. **Conference on diet and hygiene in public secondary and private schools.** Our children's health at home and at school. Being the report of a conference . . . held at Guildhall, London, May 13, 1912. With dietaries, press references, correspondence and other additional matter. Ed. by C. E. Hecht. [London] National food reform association, 1912. 467 p. 8°.

302. **Dental faculties association of American universities.** Proceedings of the . . . fourth annual meeting, held at Ann Arbor, Mich., January 22, 1912. Philadelphia, Press of the "Dental cosmos," 1912. 27 p. 8°. (Edward C. Kirk, secretary, University of Pennsylvania, Philadelphia, Pa.)

Contains: N. S. Hoff: The curriculum of the College of dental surgery of the University of Michigan, p. 10–23.

303. **Maryland state teachers' association.** Forty-fifth annual meeting at Braddock Heights, June 25–28, 1912. [Annapolis, Md., Department of education, 1913] 166 p. 8°. (H. W. Caldwell, secretary, Chesapeake City)

Contains: 1. P. P. Claxton: Education and wealth p. 29–36. 2. W. M. Davidson: Address, p. 36–43. 3. Committee on educational progress: Report, p. 49–55. 4. Alice J. Du Breuil: Written composition in the high school, p. 103–10. 5. B. C. Fleagle: Oral English in the high school, p. 112–18. 6. F. A. Manny: Socializing the secondary school [abstract], p. 118–20. 7. B. K. Purdum: Duty of the high school as a tax-supported institution, p. 120–25. 8. S. D. Gray: Means of awakening interest in agricultural education, p. 125–28. 9. Elizabeth H. Patterson: How to teach home economics in the rural schools, p. 130–33. 10. C. H. Lane: The rural school of to-day and ten years hence, p. 134–37.

304. **National council of teachers of English.** Papers and proceedings of the second annual meeting, Chicago, November 28 to 30, 1912. English journal, 2: 1–60, January 1913.

Contains: 1. F. N. Scott: Our problems, p. 1–10. 2. Gertrude Buck: Some preliminary considerations in planning the revision of grammatical terminology, p. 11–17. 3. J. M. Clapp: Oral English in the college course, p. 18–31. Discussion p. 31–33. 4. J. H. Harris: An inquiry into the compositional interests of pupils in the seventh and eighth grades, p. 34–43. 5. Proceedings of meeting, p. 44–60.

305. **National society for the study of education.** Twelfth yearbook. Part I. The supervision of city schools. Part II. The supervision of rural schools. Chicago, Ill., University of Chicago press [1913]. 119, 114 p. 8°. (S. Chester Parker, secretary, University of Chicago, Chicago, Ill.)

Contents: Part I. 1. Franklin Bobbitt: Some general principles of management applied to the problems of city-school systems. 2. J. W. Hall: Supervision of beginning teachers in Cincinnati. 3. J. D. Wolcott: Bibliography on city-school supervision. Part II. 1. A. C. Monahan: The status of the supervision of rural schools in the United States. 2. L. J. Hanifan: District supervision. West Virginia and Oregon as examples. 3. J. E. Warren: Rural supervision in New England townships and union districts. 4. Wallace Lund: Work of the state supervisors of rural schools in the South. 5. U. J. Hoffman: The relation of the county superintendent to the school directors and to the State department of education. 6. A. S. Cook: The development of a county system of expert supervision; including suburban, village, and rural schools. 7. E. M. Rapp: Methods of supervision in Berks county, Pennsylvania. 8. Jackson Davis: Supervision of rural schools for negroes. 9. J. D. Wolcott: Bibliography on rural-school supervision.

306. **Pennsylvania rural progress association. Rural life conference.** Proceedings. March 14, 15, 16, 1912, Council chamber, City hall, Philadelphia. [Williamsport, Pa., Grit press, 1913] 227 p. 8°. (Julius Smith, secretary, Pennsdale, Pa.)

Contains: 1. L. H. Bailey: The country life movement, p. 6–21, 46–52. 2. N. C. Schaeffer: The rural school, p. 22–26. 3. T. F. Hunt: Federal aid for secondary schools, p. 27–33. 4. B. H. Crocheron: History of the agricultural high school, p. 33–44. 5. O. J. Kern: Country school improvement, p. 52–62. 6. M. T. Scudder: Rural recreation, a socializing factor, p. 62–76. 7. E. M. Rapp: Schools of Berks county, Pa., p. 108–10. 8. Gifford Pinchot: Relation of the country church to country life, p. 110–18. 9. O. B. Martin: Boys' and girls' corn clubs, p. 148–54. 10. Mrs. J. P. Mumford: The school situation in the state of Pennsylvania, p. 218–21.

307. **Pittsburgh. University.** The celebration of the one hundred and twenty-fifth anniversary, February 1912. [Pittsburgh, Pa., Pittsburgh printing company, 1913?] 298 p. 8°.

Contains: F. P Keppel: The relation of the city university to other educational agencies, p. 51–56. 2. J. H. Kirkland: Progress in higher education since 1787, p. 77–87. 3. B. I. Wheeler: The American university, p. 139–43. 4. J. G. Hibben: The university man, p. 150–55. 5. R. W Sies: Scientific grading of college students, p. 171–92. 6. The articulation of the high school and the college, [by] I. C. Ketler, p. 192–93; [by] O. J. Sieplein, p. 194–95. 7. G. L. Omwake: On the merit of the recommendation from the point of view of a complete high school course, p. 196–99. 8. Merits of the report as a basis for admission to college p. 199–214. 9. The reciprocal relations of the normal schools and the high schools, [by] H. B. Davis, p. 217–22; [by] W. C. Graham, p. 222–24; [by] G E. Mark, p. 226–33; [by] W. Y. Welch, p. 234–39. 10. Normal training in the high school, [by] E. C. Noyes, p. 239–48; [by] McClellan Gordon, p. 248–50 11. High school inspection by the college, [by] Anna J. McKeag, p 251–60; [by] J. A. Shott p. 260–63; [by] J. B. Geissinger, p. 263–72. 12. College inspection by the high school, [by] J B Craig, p. 272–77; [by] Bela B. Smith, p. 277–80; [by] Edward Rynearson, p. 281–84.

Scientific grading of college students, by R. W. Sies, has been reprinted in a separate pamphlet of 23 pages

308. **Playground and recreation association of America.** Year book [1912] Playground, 6: 408–50, February 1913.

Contains: 1. What cities "played" last year and how, p. 422–39. 2. What small communities are doing, p. 440–41. 3. Salaries of recreation workers in American cities, p. 442–49.

309. **Society of college teachers of education.** Reports of investigations . . . Papers presented for discussion at the meeting . . . Philadelphia, February 24, 25, 1913. Chicago, Ill., University of Chicago press [1913] 45 p. 8°. (School review monographs, no. 3)

Contains: 1. C. H. Judd: Psychological characteristics of the intermediate grades, p. 1–6 2. G. D. Strayer: The abilities of special groups of high-school students in the subjects which

they studied, p. 7–15. 3. E. E. Jones: A study of association in children of the elementary school, p. 16–22. 4. J. L. Meriam: Incidental instruction, p. 23–30. 5. H. H. Horne: A new method in the history of education, p. 31–35. 6. E. E. Rall: An experiment with the Courtis tests in arithmetic, p. 36–45.

310. **Utah educational association.** Proceedings of the nineteenth annual convention, November 1912. Utah educational review, 4–40, January–February 1913.

Contains: 1. J. M. Mills: The president's address, p. 7–10. 2. Calvin Fletcher: Art in the high school and college—a scheme for greater efficiency, p. 10–12. 3. J. F. Russon: The problem of art instruction in the rural elementary schools, p. 12–13. 4. F. H. Fowler: Educational values and functions and the teaching of Latin and Greek, p. 13–14. 5. N. K. Nielson: Adoption of high school textbooks, p. 14–15. 6. J. P. Creer: The gradation of our schools, p. 15–17. 7. L. E Eggertsen: School houses as social centers, p. 17–19. Discussion, by C. H. Skidmore, p. 19–20. 8. E. Marie Barnard: Domestic art in the high school, p. 21–22. 9. Marian Voss: The Montessori method, p. 25–27. 10. George Thatcher: Music as a factor in education, p. 27–29. 11. C. R. Johnson: What can the schools do to make the appreciation of music intelligent? p. 29–30. 12. G. W. Thatcher: Music in the agricultural college, p. 30–32. 13. Resolved, that reading and writing and other subjects of study should be deferred until the third grade, p. 32–34. 14. A. O. Garrett: High school botany, p. 34–36

311. **West Virginia country life conference.** Proceedings . . . July 15, 16, 17, 18, 1912. Held under the auspices of the Summer school of West Virginia university, Morgantown, W. Va. West Virginia university bulletin, ser. 13, no. 3; 1–94, September 1912.

Contains: 1.T. S. Settle: Corn clubs, tomato clubs and county school fairs in Virginia, p. 11–17 2. S. A. White: The country Sunday school, p. 24–28. 3. O. H. Benson: Club work as an education for farm life, p. 69–79. 4. L. J. Hanifan: The rural school, p. 80–81. 5. C. L. Stooksberry: The normal schools and country life, p. 81–88.

312. **West Virginia university. Educational conference.** Proceedings of the tenth Educational conference on "The public school and public health," July 19–20, 1912. Held under the auspices of the Summer school of West Virginia university, Morgantown, W. Va. West Virginia university bulletin, ser. 13, no. 3: 95–153, September 1912.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

313. Cultivating the school grounds in Wake county, North Carolina, by Zebulon Judd. Washington, 1912. 12 p. illus. (Bulletin, 1912, no. 28)

314. Bibliography of exceptional children and their education, by Arthur MacDonald. Washington, 1913. 46 p. (Bulletin, 1912, no. 32)

315. Statistics of state universities and other institutions of higher education partially supported by the state, for the year ended June 30, 1912. Washington, 1913. 21 p. (Bulletin, 1912, no. 33)

316. Training courses for rural teachers, by A. C. Monahan and Robert H. Wright. Washington, 1913. 61 p. (Bulletin, 1913, no. 2)

317. The teaching of modern languages in the United States, by Charles Hart Handschin. Washington, 1913. 154 p. (Bulletin, 1913, no. 3)

List of works on the teaching of modern languages, chronologically arranged: p. 107–49.

BOOKS, PAMPHLETS, PERIODICAL ARTICLES.

EDUCATIONAL HISTORY.

318. **Coleridge, Gilbert James Duke.** Eton in the seventies. London, Smith, Elder & co., 1912. xii, 293 p. front., ports. 8°.

319. **Robbins, Charles Leonidas.** Teachers in Germany in the sixteenth century; conditions in Protestant elementary and secondary schools. New York city, Teachers college, Columbia university, 1912. 126 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 52)

Bibliography: p. [123]–126.

EDUCATIONAL BIOGRAPHY.

320. **Brockdorff, Cay von.** Voltaire und die pädagogik. Pädagogische warte, 20: 1–9, 61–69, January 1, 15, 1913.

1. Voltaire's place in the history of pedagogy. 2. His attack on the pedagogy of the Jesuits. 3. His insistence upon the free development of the child's intellectual and emotional powers. To be concluded in next number.

321. **Gran, Gerhard.** Jean Jacques Rousseau. Authorised translation, by Marcia Hargis Janson. Edinburgh and London, W. Blackwood and sons, 1912. 393 p. front., ports. 8°.

322. **Heald, Lucy.** George Meredith's interest in education. School review, 21: 112–23, February 1913.

Gives quotations from the works of Meredith, showing his ideas on the education of girls and boys. He believed in coeducation.

323. **Jordan, David Starr.** The story of a good woman, Jane Lathrop Stanford. Boston, American Unitarian association, 1912. 57 p. 12°.

"The substance of this little book was given as a memorial address on 'Founders' day' at Stanford university, March the ninth, 1909. It was published in the Popular science monthly for August, 1909."—Pref. note.

324. **Reid, Whitelaw.** One Welshman. A glance at a great career. Inaugural address, autumn session, University college of Wales, Aberystwyth, October 31, 1912. London, Macmillan and co., 1912. 59 p. 12°.

A sketch of the character and public services of Thomas Jefferson.

PRESENT SITUATION.

325. **Deyoe, Albert M.** Factors in the development of a greater Iowa. Midland schools, 27: 175–84, February 1913.

Address delivered before the Iowa State teachers' association, November 8, 1912.

Discusses consolidation of schools, standardization of small high schools, facilities for training teachers for rural and graded schools, etc.

326. **Greathouse, Charles A.** Inaugural address, Indiana State teachers' association. Educator-journal, 13: 237–42, January 1913.

Needs of the schools of Indiana.

327. **Hiatt, James S.** The public schools of Philadelphia. American school board journal, 46: 7–9, 56–57, February 1913.

"Mr. Hiatt's article is ample evidence of the able manner in which the [school] problems are being met [in Philadelphia]. He writes with the most intimate knowledge and the independent judgment of a man who has helped and is helping every forward movement for the Philadelphia schools."

328. **Koeppel, George.** Observations concerning the organization of schools and certain phases of educational work in Germany. II, III. Elementary school teacher, 13: 229–38, 287–93, January, February 1913.

Second paper of series describes the establishment of special help classes for retarded children, and the organization of such classes into schools—*hilfsschulen.*

Third paper discusses school reforms and emphasizes the work of continuation schools. To be continued.

329. **Lynch, Ella Frances.** How can the public school make good? An hour-and-a-half school day. Ladies' home journal, 30: 7–8, 58–59, February 1913.

No time spent on examinations in the scheme outlined by the author. Only ten pupils at one time are assigned to a teacher. Says: "An individual pattern of education is needed for each locality as much as an individual line of work for each child."

330. **Marferding,** *Mrs.* **Janet.** Schools at Gary, Indiana. Nebraska teacher, 15: 351–53, February 1913.

To be continued next month.

331. **Meese, Friedrich.** Beobachtungen und betrachtungen über das schulwesen der Vereinigten Staaten von Nord-Amerika. Neue jahrbücher für pädagogik, 15: 231–49, 287–302, heft 5–6, 1912.

332. **Münch, Wilhelm,** *ed.* Das unterrichts- und erziehungswesen Gross-Berlins. Im verbindung mit einigen fachleuten. Berlin, L. Oehmigke [1912] vi, 246 p. 8°.

333. **Pitollet, Camille.** Lectures de vacances. Expériences pédagogiques allemandes et suisses. Revue de l'enseignement des langues vivantes, 30: 75–81, février 1913.
A very general criticism of German and Swiss educational methods.

PEDAGOGICS AND DIDACTICS.

334. **Coster, Silvie De Grasse.** The development of the spiritual life as an aim in education. [New York] New York university, 1912. 18 p. 8°.
Awarded the prize of the New York university philosophical society.

335. **Dyer, Henry.** Education and national life. London, Blackie and son, 1912. 112 p. 16°.
Directs attention to the wider aspects of national education. Contains chapters on Present-day education, Essentials of education, Physical conditions, Specialized education, Religious and social education.

336. **Gilbert, Charles B.** What children study and why. A discussion of educational values in the elementary course of study. Boston, New York [etc.] Silver, Burdett and company [1913] 331 p. 8°.
An effort "to give in plain, untechnical terms a few of the practical psychological and sociological reasons for teaching the subjects found in most of our elementary school curricula, and to state what should result, from their study, to the benefit of the children and of society."

337. **Jones, W. Frank.** The vitality of teaching. Wyoming school journal, 9: 110–15, January 1913.
Gives some conclusions drawn from reports made by three critic teachers of Baltimore on the work of 50 selected grade teachers, and claims that the biggest word in education to-day, rightly understood, is motivation.

338. **Levinstein, Kurt.** Die erziehungslehre Ernst Moritz Arndts; ein beitrag zur geschichte der pädagogik im ersten jahrzehnt des 19. jahrhunderts. Berlin, Weidmann, 1912. 158 p. 8°.

339. **Lewis, E. O.** The elementary education of the democracy. Journal of education (London), 45: 20–24, January 3, 1913.
Discusses the problem of elementary education both from the cultural and utilitarian aspect, with suggestions as to how the elementary education of the democracy could be made a combination of the liberal and the vocational.

340. **Owen, William Baxter.** The humanities in the education of the future and other addresses and papers. Boston, Sherman, French & company, 1912. 187 p. 8°.
Contains addresses on The humanities in the education of the future, Value of discipline in education, Professional study in college, Teaching of the classics, High school training in its bearing upon civic integrity, Efficiency the aim of education, College fraternities, Town and gown, etc.

341. **Scharrelmann, Heinrich.** Erlebte pädagogik. Gesammelte aufsätze und unterrichtsproben. Hamburg und Berlin, A. Janssen, 1912. 405 p. 8°.

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

342. **Buchner, Edward Franklin.** Psychological progress in 1912. [Lancaster, Pa., 1913] 11 p. 8°.
Reprinted from the Psychological bulletin, vol. 10, no. 1, January 1913.

343. **Heck, W. H.** A study of mental fatigue in relation to the daily school program. Lynchburg, Va., J. P. Bell company, 1913. 28 p. 8°.
The author concludes that "Mental fatigue in relation to the daily school program is far less than is generally believed. With sound bodies, a hygienic school, proper classification, frequent relaxation, a vital and varied curriculum, and live teachers, most children will show no problem of fatigue in relation to the daily program."

344. **Morrill, Arthur B.** Lectures on psychology for teachers. New Haven, Conn.; The Harty-Musch press, inc., 1913. 168 p. 12°.

345. **Slaughter, J. W.** The adolescent. With an introduction by J. J. Findlay. London, G. Allen & co., lim., 1912. xv, 100 p. 12°.

346. **Timerding, Heinrich Carl Franz Emil.** Die erziehung der anschauung; mit 164 textfiguren. Leipzig und Berlin, B. G. Teubner, 1912. vii, 242 p. illus. 8°.

347. **Weber, L. W.** Über normales und pathologisches lügen. Zeitschrift für pädagogische psychologie, 14: 18–29, January 1913.

An attempt to distinguish between "normal and pathological lying." Cites cases.

348. **Winch, W. H.** Mental adaptation during the school day as measured by arithmetical reasoning.—Part I, II. Journal of educational psychology, 4: 17–28, 71–84, January, February 1913.

SPECIAL METHODS OF INSTRUCTION.

349. **Eddins, A. W.** Story telling as an aid to teaching. Texas school journal, 30: 2–6, January 1913.

Address delivered before the teachers' institute of Upshur county, at Gilmer, Texas, December 19, 1912.

350. **Hellems, F. B. R.** Alice and education. Atlantic monthly, 111: 256–65, February 1913.

A study of the allegory contained in Carroll's fairy story "Alice in Wonderland." Author discusses the play-element in the educational development of the child.

351. **Nadolle, L.** Der erste deutsche kinokongress und seine ergebnisse für die schule. Pädagogische zeitung, 42: 3–5, January 2, 1913.

A report of the first German cinematograph congress, which had a section devoted to the use of moving pictures in education. Writer says the results were meager as far as the schools were concerned.

352. **Smith, John Talbot.** The motion-picture drama in the school. Catholic educational review, 5: 97–104, February 1913.

SPECIAL SUBJECTS OF CURRICULUM.

353. **Bracq, Jean Charlemagne.** French in the college course. Educational review, 45: 122–39, February 1913.

"Taught by a large minded and cultivated teacher, French stands second to none, among studies, as an instrument of mental discipline." Recommends for the freshman year an extensive reading of modern French books.

354. **Claxton, Philander P.** The place of music in education. School music, 13: 5–9, January 1913.

Address delivered at the Illinois teachers' association, Music section, at Peoria, December 28, 1912.

355. **Cole, Lawrence W.** The practical value of modern languages. Colorado school journal, 28: 13–18, January 1913.

"Address given before Modern language section of Colorado teachers' association, November 1912."

356. **Genthe, Karl Wilhelm.** Das system der höheren schulen Amerikas und der biologische unterricht. Monatshefte für den naturwissenschaftlichen unterricht, 6: 1–24, heft 1, 1913.

An introductory article dealing almost entirely with the organization of the American educational system, and not reaching the main subject. To be continued.

357. **Greenberg, Morris.** The pupil's view of drawing. Significant statements by boys and girls in a large city high school. School-arts magazine, 12: 358–60, February 1913.

Statements from pupils of the Commercial high school, Brooklyn, N. Y.

358. **Herndon, Carrie P.** Printing and bookbinding as school arts. Normal instructor, 22: 26, February 1913.

359. **Hess, John A.** Teaching elementary German at a State university. Monatshefte für deutsche sprache und pädagogik, 14: 3–8, January 1913.

Discusses difficulty of using the direct method in a State university. "For present conditions I have found a compromise method most satisfactory."

360. **Hopkins, Annette B.** English literature and the college freshman—a reply. School review, 21: 134–38, February 1913.

A reply to Miss H. S. Hughes paper, which was published in the School review for November 1912.

361. **Jones, William Henry Samuel.** Classics and the direct method; an appeal to teachers. Cambridge, W. Heffer and sons, ltd. [etc., etc.] 1912. cover-title, 16 p. 12°.

362. **Kahle, W.** Die reformbestrebungen des biologieunterrichts. Pädagogische studien, 34: 64–75, January 1913.

Purports to be a survey of the whole movement. Describes biology as "a Cinderella among the sciences" in respect to its place in present curricula, and analyzes the plans to improve its position.

363. **Leathes, Stanley.** Modern languages and a liberal culture. Modern language teaching, 8: 225–29, December 1912.

Education should aim at developing any special faculty or aptitude that the pupil may possess, and the author conceives that the study of modern languages could be made a successful instrument of liberal culture.

364. ———. Modern languages in education. Educational review, 45: 155–66, February 1913.

Draws distinction between the educational value of Latin and Greek, and the modern languages.

365. **Milne, William P.** The teaching of scholarship mathematics in secondary schools. School world, 15: 8–11, January 1913.

A paper read before the Educational science section of the British association at Dundee, September 1912.

The problem of teaching scholarship mathematics as opposed to elementary mathematics requires the application of the same methods "extended in scope and modified in plan which have proved so successful in the case of the elementary portions of the subject."

366. **Monroe, Walter S.** Analysis of Colburn's arithmetics. V. Elementary school teacher, 13: 294–302, February 1913.

Fifth article of series. Discusses the educational principles recognized; the inductive method, motivation.

367. **Nicholls, Sophie.** The geography room and its essential equipment. Geographical teacher, 6: 308–14, Autumn 1912.

Advocates the fitting up of a special classroom for teaching geography, and describes the necessary apparatus and furniture.

368. **Pannese, Gerardo.** Storia della ginnastica moderna negli stati d'Europa in rapporto con la pedagogia scientifica. Milano-Roma-Napoli, Società editrice Dante Alighieri di Albrighi, Segati & c., 1912. 157 p. 12°.

369. **Ricek, L. G.** Das deutsche schrifttum in der schule. Wien, A. Pichlers witwe & sohn, 1912. 184 p. 8°.

Includes a general introduction and illustrative selections from the principal branches of German literature.

370. **Seidel, Heinrich.** Der deutsche aufsatz in der reiseprüfung, 1901–1910. Berlin, Weidmann, 1912. xvi, 511 p. 8°.

371. **Shurter, Edwin DuBois.** Oral English in the schools. Public speaking review, 2: 148–54, January 1913.

"A paper read before the English section of the Texas State teachers' association, at Fort Worth, Texas, November 28, 1912."

372. **Spencer, T. E.** Motivation in language work. Missouri school journal, 30: 61–66, February 1913.

373. **Stockton, J. L.** Revision of a course of study in geography. Elementary school teacher, 13: 219–23, January 1913.

Outlines a course in "environment," which is intended "to take the place of elementary science, nature-study, school gardening, and geography of the first three grades, and to merge into the geography of the fourth grade."

374. **Stone, C. W.** Problems in the scientific study of the teaching of arithmetic. Journal of educational psychology, 4: 1–16, January 1913.

375. **Varenne, Gaston.** L'enseignement de deux langues vivantes. Revue universitaire, 22: 12–17, janvier 1913.

A defense of the teaching of a modern language, the preference being for German, in French schools.

376. **Warriner, Eugene Clarence.** The teaching of English classics in the grammar grades. Suggestions for study, questions and subjects for written exercises on the standard literature. Boston, New York [etc.] Houghton Mifflin company [1913] 126 p. 12°. (Riverside literature series)

377. **Welch, F. A.** Our debating and declamatory leagues. Midland schools, 27: 137–39, January 1913.

Discusses the problems of interscholastic high school debating.

Also in Public speaking review, 2: 138–43, January 1913.

"Synopsis of paper read before the Public speaking round table of the Iowa State association meeting, held November 8th."

KINDERGARTEN AND PRIMARY SCHOOL.

378. **Baldwin, W. A.** The conflicting pedagogy of Madame Montessori. Journal of education, 77: 147–49, February 6, 1913.

379. **Boggs, L. Pearl.** Some possibilities of Froebel's educational system for China. Child-welfare magazine, 7: 199–202, February 1913.

Writer says the kindergarten has appealed very strongly to the Chinese people. Thinks that Froebel "approaches most nearly to the Chinese ideals in the education of women."

380. **Fischer, Aloys.** Hauptprobleme der kindergartenreform. Zeitschrift für pädagogische psychologie, 14: 11–17, January 1913.

A thoughtful article on the philosophy of the kindergarten. 1. Raison d'être of the kindergarten. 2. The problem of organization. 3. Pedagogical methods and the kindergarten.

381. **Halsey, Walter N.** A valuation of the Montessori experiments. Journal of education, 77:63–64, January 16, 1913.

382. **O'Shea, Michael V.** The newest educational enthusiasm. Popular educator, 30: 311–13, February 1913.

The Montessori system.

383. **Stevens, Ellen Yale.** The Montessori movement in America. McClure's magazine, 40: 222–24, February 1913.

News of the four schools established in this country.

RURAL EDUCATION.

384. **Hart, W. R.** The redirection of the rural school. Journal of education, 77: 89–90, January 23, 1913.

Discusses the redirection of the aims and energies of the rural schools in respect to the course of study and the buildings and grounds.

385. **Holst, J. H.** Victor consolidated schools. Inter-mountain educator, 8:5-7, January 1913.

Describes the Victor consolidated district no. 7 of Victor, Montana.

386. **McCullock, Alma L.** A country school: the real thing. Atlantic educational journal, 8:211–15, February 1913.

"The author of this article was formerly rural school extension worker of the Georgia State normal school at Athens, and writes Miss Perry's story from first-hand knowledge."—A. C. M. in Editor's note.

387. **Moon, A. H.** The need of better rural supervision in Georgia. School and home, 4:14–15, January 1913.

To be continued.

388. **Seerley, Homer H.** The country school. A study of its foundation, relations, developments, activities, and possibilities. New York, C. Scribner's sons, 1913. xx, 218 p. 12°.

"These pages have been written by one who arrived at the opinions here presented by actual experience with the life of the farm."—Pref.

389. **Taft, Anna B.** Community study for country districts. A method of investigating a small village or section of the open country. New York, Missionary education movement of the United States and Canada, 1912. 137 p. charts. 8°.

SECONDARY EDUCATION.

390. **Hill, Roscoe C.** The ideal product of the high school. Colorado school journal, 28:8–12, January 1913.

"A paper read at the Colorado teachers' association, November 1912."

Gives a few statements made by pupils of senior English classes, giving their views of an ideal high school course and what it should do for them.

391. **Mackie, Ransom.** Progressive high school reorganization. Education, 33: 337–43, February 1913.

Discusses the high schools of Boston. Gives programme of studies.

392. **Shallies, Guy-Wheeler.** The distribution of high school graduates, after leaving school. School review, 21: 81–91, February 1913.

Presents interesting graphic charts and statistics. Exhibits fact that "the college is prominent in its close relation to the high school course. The preparation for the other vocations is less direct."

393. **Steitz, Wilhelm.** Die "erziehung für das leben" an den amerikanischen high schools. Neue jahrbücher für pädagogik, 15: 416–32, heft 8, 1912.

Entertaining observations of American secondary school life as seen by a Prussian exchange teacher at "University High," Chicago.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

394. **Chancellor, William E.** What is a good institute? School journal, 80: 90–91, 111, January 1913.

395. **Holland, Ernest O.** The Pennsylvania state normal schools and public school system. New York city, Teachers college, Columbia university, 1912. 94 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 55)

A critical survey of the provision made in Pennsylvania for the training of teachers in the state normal schools, and an investigation of the influence of these schools on the public schools in their vicinity.

396. **Kendall, Calvin N.** The training of high school teachers. School review, 21: 92–102, February 1913.

Shows that the academic courses in education, observation, and practice teaching have, in the main, been satisfactorily carried on, but the latter "has not been developed as the needs of the schools demand." The paper does not discuss the training of teachers for industrial education.

397. **O'Leary, R. D.** The most empirical of the professions. Sewanee review, 21: 1–14, January 1913.

Discusses the teaching profession.

398. **Parker, S. Chester.** Bibliographies, briefs, and oral exposition in normal schools. Elementary school teacher, 13: 224–28, January 1913.

A discussion of "three phases of cooperative training in English which are possible in normal schools."

399. **Todd, John W.** Ethical relations of teachers and school boards. American schoolmaster, 6: 1–12, January 1913.

"Paper read at the general meeting of the North Dakota educational association, at Grand Forks, October 25, 1912."

400. **Weeks, Arland D.** The training of the industrial teacher. Education, 33: 375–78, February 1913.

Advocates broad professional training for the industrial teacher. He should be well equipped "on the side of professional and liberal culture. . . . He should especially be conversant with the bearings of industrial teaching upon the social order."

401. **Williams, H. B.** What professional training should the State require of inexperienced teachers? Ohio educational monthly, 62: 49–56, February 1913.

HIGHER EDUCATION.

402. **Battle, Kemp P.** History of the University of North Carolina. Volume II. From 1868 to 1912. Raleigh, Edwards & Broughton printing company, 1912. 875 p. illus. 8°.

403. **Boutroux, Emile.** La pensé eaméricaine et la pensée française. Revue pédagogique, 62: 52–73, janvier 1913.

The first of a series of discussions written at the request of the Comité "France-Amérique," of which the purpose is to develop the economic, intellectual, and artistic relations between the nations of the New World and the French nation. First pub. in the review France-Amérique for January 1913.

404. **Boyd, William R.** How the Iowa state colleges are getting together. American review of reviews, 47:209–11, February 1913.

Under the old plan Iowa had one State university and two other institutions of higher education endeavoring to develop into universities. A new scheme of centralization has strengthened the university, and made a stronger agricultural college and normal school. The scope of each institution is defined by the author.

405. **Haldane,** *Viscount.* The civic university. Hibbert journal, 11: 233–54, January 1913.

An address delivered by the writer to the citizens of Bristol, England, on his accession to the chancellorship of the University of Bristol. A plea for an enlightened policy in education.

406. **Hart, Albert Bushnell.** Western types of higher education. Independent, 74: 239–42, January 30, 1913.

Seven months spent in the West, under the Harvard exchange system with the Western colleges, have given Prof. Hart "a vivid and favorable impression of the conditions of intellectual and pedagogical progress in that part of the country," an advance which he here briefly reviews.

407. **Kirkland, J. H.** The Association of colleges and secondary schools of the Southern States. School review, 21: 103–11, February 1913.

President's address, November 15, 1912. A review of the work accomplished. Recommends certain changes in the constitution of the Association.

408. **Paton, Stewart.** College or university. Popular science monthly, 82: 192–201, February 1913.

"If our eastern universities persist in continuing their present parochial forms of administration, within the next decade we shall see a multiplication of independent foundations forming the nuclei or centers of university work. Half a century hence there will probably be a resurrection of the older and privately endowed colleges as state universities."

409. Relations between school and university. School world, 15: 18–22, January 1913.

A digest of the recommendations on school candidates in examinations above university entrance standards, taken from the final Report of the Committee on the overlapping between secondary education and that of universities, presented to the Educational science section of the British association at Dundee, September 1912.

410. **Snedden, David.** The new education. Harvard illustrated magazine, 14: 211–16, January 1913.

Third article in series on The college man and current problems.

411. **Sollas, I. B. J.** The story of Newnham college. Cambridge, W. Heffer and sons, ltd., 1912. 23 p. front., illus. (incl. ports.) 16°.

SCHOOL ADMINISTRATION.

412. **Bralley, F. M.** County supervision of schools. Texas school magazine, 15: 7–9, February 1913.

From eighteenth biennial report of the State superintendent of public instruction of Texas.

413. **Cubberley, Ellwood P.** The reorganization of the State board of education. Sierra educational news, 9: 25–30, January 1913.

414. **Finegan, Thomas E.** A textbook on New York school law, including the revised education law, the decisions of courts, and the rulings and decisions of state superintendents and the commissioner of education. 7th ed., rev. to January 1, 1913. Albany, N. Y., M. Bender & company, 1913. 302 p. 8°.

415. **Hayward, F. H.** Educational administration and criticism. A sequel to the "Holmes circular." With a preface by John Adams. London, Ralph, Holland & co. [1912] xiv, 592 p. 12°.

The circular under discussion, on "The status and duties of inspectors employed by local educational authorities," was sent out in 1910 by E. G. A. Holmes, chief inspector of elementary schools in England.

416. **Kerschensteiner, Georg.** Grundfragen der schulorganisation; eine sammlung von reden, aufsätzen und organisationsbeispielen. 3., verb. aufl. Leipzig u. Berlin, B. G. Teubner, 1912. vi, 338 p. 12°.

417. **Maxwell, William H.** The attitude of the American parent toward education. Educational review, 45: 167–83, February 1913.

"It is infinitely easier to improve the schools than to improve the parents. But every improvement in the schools means some improvement in parents." Says that we should look to psychology to discover in the budding childhood "the promise and potency of the developed nature," thereby aiding parents to appreciate fully the special aptitudes of their sons and daughters. But psychology is not making researches along such lines, but occupies itself with counting time reactions, etc. "It has smothered itself in statistics."

418. **Stockton, J. L.** Effective supervision. Education, 33: 344–51, February 1913.

Discusses the work of the superintendent, who is not only required to deal with strictly pedagogical problems, but must also be responsible for business matters connected with the school system. The remedy in a large system consists "in a separation of administrative and supervisory duties." Recommends a business manager who is responsible to the superintendent.

SCHOOL MANAGEMENT.

419. **Dana, John Cotton.** All-year schools. Independent, 74: 137–39, January 16, 1913.

Describes the work accomplished in the public schools of Newark, N. J. Result has been to shorten the elementary course by two years. If applied to the high school, it will shorten the total course of 12 years by three years.

420. **Downey, James E.** Significant school statistics. Education, 33: 359–67, February 1913.

Presents tables of statistics gathered at the Boston High school of commerce, showing attendance, distribution of marks by grades, withdrawals, etc.

421. **Eikenberry, W. L.** The statistical investigation of school grades. School science and mathematics, 13: 27–36, January 1913.

422. **Grady, William E.** Age and progress in a New York city school. Psychological clinic, 6: 209–21, January 15, 1913.

"The data contained in this article were collected in order to ascertain conditions in a particular New York City school that is considered sufficiently typical of schools with a large per cent of foreign-born pupils to warrant confidence in results obtained."

423. **Lang, A. R.** Methods of determining students' advancement. Wyoming school journal, 9: 115–20, January 1913.

424. **Laselle, Mary A.** A novel experiment. [Newtonville, Mass., Newton vocational school print shop, 1913] vi, 14 p. 12°.

Foreword by Superintendent F. E. Spaulding.

The pamphlet describes successful work in the Newton technical high school, with a special class of 50 girls over 15 years of age who had failed to complete the grammar school course.

425. **Parris, Thomas G.** Devices for saving the time of the teacher. Journal of education, 77: 129–30, January 30, 1913.

"It is the purpose of this paper to point out how a few devices have been used to help the teacher to do her clerical work better and at the same time avoid interrupting her in her teaching and recitation work."

426. Seven-year elementary school. Elementary school teacher, 13: 274–86, February 1913.

Describes the work of the elementary school of the University of Chicago, which "has been working for some years on the problem of saving the time of the pupils so that they may enter the high school at an earlier period than has been the custom in the regular eight-year course which has up to this time been administered in this school."

427. Three and a half or twelve? Journal of education, 77: 149–51, February 6, 1913.

A symposium on the age at which children should start to school.

SCHOOL SANITATION AND HYGIENE.

428. **Dufestel, Louis.** L'hygiène à l'école maternelle, à l'usage des institutrices et des aspirantes au certificat d'aptitude à l'inspection des écoles maternelles. Paris, C. Delagrave [1912] 124 p. 8°.

429. **Gulick, Luther Halsey** *and* **Ayres, Leonard P.** Medical inspection of schools. [4th ed., rev.] New York, Survey associates, inc., 1913. xx, 224 p. illus. 8°. (Russell Sage foundation publication)

Bibliography: p. 203–06.

"While covering much of the matter treated in the original book, the text has been entirely re-written, and the description of methods and forms, as well as the quantitative material, brought down to date."—Pref.

430. **McKenny, Charles.** Sex hygiene and the public schools. American schoolmaster, 6: 13–19, January 1913.

Discusses the difficulties which lie in the way of introducing the study of sex hygiene in the public schools, and the conditions under which the subject would be morally effective, if introduced.

431. **O'Shea, Michael V.** [The efforts being made in Wisconsin to stop the use of tobacco among school children] Wisconsin journal of education, 45: 2–4, January 1913.

Editorial.

432. **Steinhaus, F.** Beiträge zur frage der ventilation von klassen-räumen. Zeitschrift für schulgesundheitspflege, 26: 6–33, January 1913.

Gives results of experiments with class-room air. Examines critically various ventilating systems. An extremely thorough treatment of the subject.

433. **Tobey, S. B.** One city's experience with medical inspection. American school board journal, 46: 26, 55–56, February 1913.

Two years' trial of medical inspection in Wausau, Wisconsin.

434. **Warren, Benjamin S.** Open air schools for the prevention and cure of tuberculosis among children, by B. S. Warren, passed assistant surgeon. Prepared by direction of the surgeon general. Washington, Government printing office, 1912. 20 p. plates, fold. plan, diagrs. 8°. (U. S. Public health service. Public health bulletin. no. 58)

"List of Public health bulletins": p. 17–20.

PLAYGROUNDS, SCHOOL GARDENS.

435. **Schulze, Ernst.** Amerikanische volksparke. Körperliche erziehung, 8: 355–65, December 1912.

Dr. Schulze concludes his series of articles on American parks with descriptions of parks and playgrounds in Chicago and Boston. Well illustrated.

436. **Settle, T. S.** Playground apparatus at the Lawrenceville high school. Virginia journal of education, 6: 158–59, January 1913.

In this article Mr. Rowe, principal of Lawrenceville high school, tells how he secured labor and material to equip an up-to-date playground. All of the apparatus is simple of construction, easily repaired, and very pleasing to the pupils. It is cheap, very little of the material having been bought new.

437. **[Williams, Henry G.]** The school garden movement. Ohio teacher, 33: 256–58, January 1913.

SOCIAL ASPECTS OF EDUCATION.

438. **Brandenburg, W. A.** The home, the church, the school. Oklahoma school herald, 21: 13–17, January 1913.

Excerpts from an address by the Superintendent of schools of Oklahoma City, Okla.

439. **Chancellor, William Estabrook.** Temperament and the education of foreigners and of their children for American citizenship. Educational foundations, 24: 325–39, February 1913.

Continued from the January number. Concluded next month.

440. **Lang, Ossian.** The school as a social center. Social center, 1: 135–41, January 1913.

Address delivered before the University convocation of the State of New York, in June 1903.

441. **Moritzen, Julius.** The peace movement of America. New York and London, G. P. Putnam's sons, 1912. xix, 419 p. illus. 8°.

Contains chapters on The professor as propagandist, American school peace league, etc.

442. **Perry, Clarence Arthur.** A survey of school social centers. Season of 1911–12. New York city, Division of recreation, Russell Sage foundation [1913] 20 p. 8°. (Pamphlet no. R123)

443. **Texas farm and ranch publishing company.** Social centers in the Southwest. Beginnings; why community welfare demands them; how they are being organized and maintained. New ed. Dallas, Tex., Texas farm and ranch publishing co., 1912. 34 p. illus. 12°

Contains papers by C. W. Holman and C. D. Murphy.

MORAL AND RELIGIOUS EDUCATION.

444. **Barclay, Wade Crawford.** First standard manual of teacher training . . . Pt. I. Bible section. New York and Cincinnati, The Methodist book concern [1912] ix, 156 p. 12°.

"References for supplementary reading" at end of each chapter.

445. Can the essentials of religious faith and practice be taught in the public schools of the United States for the good of the country without violating the spirit of the Constitution and without justifying antagonism from religious sects. Educational foundations, 24: 353–60, February 1913.

Continued from January number.

446. **Gage, Earle W.** How can we best aid the child? Home progress, 2: 21–26, February 1913.

Lays stress upon moral and religious education.

MANUAL AND VOCATIONAL TRAINING.

447. **Andrews, Benjamin R.** A course in household economics. Journal of home economics, 5: 26–33, February 1913.

"Presented at the annual meeting of the American home economics association, Boston, December 31, 1912."

Deals with college courses in household economics, for undergraduates and graduates respectively.

448. **Cooley, E. G.** The problem of establishing vocational schools. School and home education, 32: 214–19, February 1913.

An address delivered at Philadelphia before the National society for the promotion of industrial education, December 1912.

449. **Duncan, Robert R.** Industrial fellowships: five years of an educational industrial experiment. Journal of the Franklin institute, 175: 43–57, January 1913.

Describes a scheme of relationship between industry and learning for the purpose of promoting the increase of useful knowledge. First fellowship established in 1906 at the University of Kansas.

450. **Henderson, Wilson H.** What the manufacturer should expect of the manual training school graduate. Manual training magazine, 14: 245–47, February 1913.

Answers a question raised by a manufacturer in the Furniture manufacturer and artisan, October 1912.

451. **Hylla, E.** Die verwicklichung der arbeitsschulideen in elementarunterricht. Pädagogische warte, 20: 13–18, January 1, 1913.

Urges that teachers consider carefully the vocational school idea as a special field of opportunity in the elementary school.

452. **Kirk, John R.** Education for home-making. Arkansas teacher, 1: 1–2, February 1913.

453. **Lewis, E. E.** The present status of vocational subjects in the high schools of California. Manual training magazine, 14: 229–34, February 1913.

Data secured by H. C. Greenwood. Returns obtained from 165 different high schools in California.

454. **Lugg, Charles H.** What shall the high school do? South Dakota educator, 26: 12–14, January 1913.

Discusses the advisability of introducing the industrial courses into the small high schools.

455. **Mearns, William Hughes.** The boy in the blue blickey. How school and shop are cooperating. Saturday evening post, 185: 8–9, 49–50, January 25, 1913.

The illustrations in this article are photographs of actual work in the Industrial high school at Fitchburg, Mass.

456. **Münsterberg, Hugo.** Psychology and industrial efficiency. Boston and New York, Houghton Mifflin company, 1913. 321 p. 8°.

457. **Roman, F. W.** Control of the industrial schools of Germany. Elementary school teacher, 13: 269–73, February 1913.

Owing to the dual school organization in Prussia, there has been a conflict of interests between the clerical party and those interested in industrial education. The clericals want "a guaranty that one hour per week shall be given over to their hands for religious instruction. The other party claims that religious teaching has no place in a trade school. As it is now, only the districts or communes can make attendance compulsory. The result is that for the most part Prussia has only voluntary trade-school attendance."

The author says that two public school systems in the same city create jealousy. The interests of the people are divided; a feeling of class division in society exists, thus undermining democracy. Munich leads all German cities in its trade school development, because it has a united school system. Describes conditions in the states of Würtemberg and Baden, which were the first to develop industrial schools.

458. **Shields, Thomas Edward.** Survey of the field. [Vocational education] Catholic educational review, 5: 139–56, February 1913.

Discusses especially the report of Mr. Edwin G. Cooley, advocating a separate system of vocational schools. The author does not approve of adding a special tax to the heavy burden the people are now bearing in order that vocational schools may be built. He claims that "If industrial schools are to be erected and equipped, the financial burden of so doing should evidently be borne by the interests that would profit most by such a system of schools."

459. **Walker, Hugh.** Are "the brains behind the labour revolt" all wrong? Hibbert journal, 11: 348–65, January 1913.

Incidentally discusses industrial education as a remedial agency for many of the social ills. Explains how the state by a system of industrial training, prolonging the period of instruction to about 18 years, would solve the baffling problem of "blind-alley employments." Says: "The breeding of men who can not earn their own living is as costly as it is morally disastrous; and the present system, which, at the close of the school period, turns thousands of children on to the streets, there to make a precarious living for a few years, inevitably produces that result." Shows the wonderful results accomplished in Munich, Germany, by industrial education.

460. **Wild, Laura H.** Training for social efficiency. Chapter VII. What education is for. Education, 33: 354–58, February 1913.

Education is "to teach human beings to spell out the meaning of the experiences of life."

VOCATIONAL GUIDANCE.

461. **Bagley, W. C.** Vocational guidance and the teacher of science. School science and mathematics, 13: 89–97, February 1913.

"A paper read at the Evanston meeting of the North central association of science and mathematics teachers, November 29, 1912."

462. **Dodge, Harriet Hazen.** Survey of occupations open to the girl of 14 to 16 years. Boston, Mass., Girls trade education league, 1912. 39 p. 8°.

"This survey is designed especially to meet the numerous inquiries of teachers, vocational counselors, and social workers as to what the girl can do who seeks wage-earning in the earliest years in which the law allows her to engage in it."—Pref.

463. **Lewis, E. E.** Studies in vocational guidance. II. In what grades is the school exodus concentrated? School and home education, 32: 212–14, February 1913.

464. **Prosser, C. A.** Practical arts and vocational guidance. Manual training magazine, 14: 209–21, February 1913.

An interesting presentation of the subject of vocational guidance. Shows the importance of the elementary school period. Discusses the problems that confront the teacher. If training in the practical arts is to assist boys "to find themselves in order that at 14 they may make an intelligent choice of their work for the future, it must be varied."

AGRICULTURAL EDUCATION.

465. **Bricker, Garland A.** Agencies for the preparation of teachers to teach agriculture. Progressive teacher, 19: 35–36, February 1913.

Gives a list of texts in elementary and secondary agriculture, especially recommended for use as guides in home study.

466. **Darlu, A.** Le vocation paysanne et l'école. Revue pédagogique, 62: 74–79, janvier 1913.

A review of an article by Dr. Emmanuel Labat in the Revue des deux mondes, July 1912, on the necessity of training the French peasant for his vocation.

467. **Davis, B. M.** Summary of a study of instruction in agriculture in rural elementary schools. Nature-study review, 9: 2–13, January 1913.

Address of the President at the annual meeting of the American nature-study society, December 30, 1912.

468. **Stone, W. E.** The scope and standards of agricultural colleges. Business America, 13: 158–61, February 1913.

"From president's address, Association of American agricultural colleges and experiment stations, Atlanta, Ga., November 1912."

EDUCATION OF WOMEN.

469. Fraternities in women's colleges. Century monthly magazine, 85: 526–32, February 1913.

A symposium. Comments by the presidents and deans of the various women's colleges in the United States on Miss Rickert's articles in the Century for November and December 1912.

470. Training women for a new civilization: how the Camp fire girls acquire efficiency and romance through their contact with nature. Craftsman, 23: 553–58, February 1913.

Shows progress of the movement. Discusses the philosophy upon which it is based.

EXCEPTIONAL CHILDREN.

471. **Bruner, Frank G.** What shall we teach the subnormal child? Educational bi-monthly, 7: 112–23, December 1912.

List of references, p. 123.

472. **Groszmann, Maximilian P. E.** The study of individual children; a system of records, including a complete child history, medical examinations, physio-psychological and mental tests, daily regimen and disease record, also case diagnosis, classification, etc. Plainfield, N. J., National association for the study and education of exceptional children, 1912. 76 p. 8°.

473. **Leighton, Etta V.** The hard-of-hearing child in the public school. Volta review, 14: 672–79, February 1913.

Careful supervision will prevent "the cruel mistake of assigning the hard-of-hearing child to the class for mental defectives."

474. **McMurtrie, Douglas C.** The care of crippled children in the United States. A study of the distribution of institutions and work; an analysis of systems of care, and a consideration of the principles involved; together with a bibliography of material relating to cripples in America. Being a revision of an article appearing in the American journal of orthopedic surgery, May 1912. New York city, 1912. 33 p. 4°.

LABORATORIES AND MUSEUMS.

475. Art museums and schools. Four lectures delivered at the Metropolitan museum of art. New York, C. Scribner's sons, 1913. 144 p. 12°.

CONTENTS: 1. Stockton Axson: Museums of art and teachers of English. 2. Kenyon Cox: Museums of art and teachers of art. 3. G. Stanley Hall: Museums of art and teachers of history. 4. O. S. Tonks: Museums of art and teachers of the classics.

476. **Clark university, Worcester, Mass. Educational museum.** The Educational museum at Clark university. Catalogue of the Department of school hygiene, by Wm. H. Burnham and M. Evelyn Fitzsimmons. Worcester, 1912. [526]–552 p. 8°.

477. **Duncan, Robert K.** Industrial research. Harper's monthly magazine, 126: 385–90, February 1913.

A presentation of work accomplished in the great laboratories of the world.

LIBRARIES AND READING.

478. **Cavanaugh, John.** A plea for the classics. Public libraries, 18: 1–6, 45–49, January, February 1913.

Address delivered by the president of Notre Dame university at the dedication of the Public library, Gary, Ind. Urges the reading of great literary masterpieces.

479. **Ryan, Johanna V.** Library conditions in American cities. Educational bi-monthly, 7: 157–72, December 1912.

Shows the library movement in high schools from East to West.

480. **Wolfe, L. E.** The many-book versus the few-book course of study. Educational review, 45: 146–54, February 1913.

Suggests the reading of inspiring books, suited to the grades, on all great lines of race-achievement—food, clothing, shelter, transportation, history, civics, etc.

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UNITED STATES BUREAU OF EDUCATION

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

COMPILED BY THE LIBRARY DIVISION OF THE BUREAU OF EDUCATION, UNDER THE DIRECTION OF JOHN D. WOLCOTT, ACTING LIBRARIAN

APRIL, 1913

WASHINGTON
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1913

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

INTRODUCTORY NOTES.

From the list in the following pages, these representative books and articles may be selected: National education association, Proceedings 1912, and Report of Committee on teachers' salaries and cost of living; Monroe's Cyclopedia of education, volume 4; Chancellor, School system of Buffalo; Lanson, Trois mois d'enseignement aux États-Unis; McKeever, Training the boy; Gillette, Rural sociology; Russell, Professional factors in the training of the high-school teacher; Suzzallo, Organization of the teaching profession; Moore, How New York city administers its schools; Bryant, School feeding; Willson, Education in sex hygiene.

The Committee on school inquiry of the Board of estimate and apportionment of the city of New York has recently issued the following reports of its specialists on educational aspects of the inquiry:

Part II. Subdivision I. Elementary schools. Section D.—The Courtis tests in arithmetic. By Stuart A. Courtis. iv, 158 p.

Part II. Subdivision II. Vocational (industrial) schools. What kinds of vocational schools are needed? By Herman Schneider. vii, 56 p.

Part II. Subdivision III. High schools. Section B.—Commercial high schools and commercial courses in high schools. By Frank V. Thompson. vi, 44 p.

Part II. Subdivision III. High schools. Section C.—Problems in organization and administration. By Frank W. Ballou. ix, 142 p. fold. charts.

The Survey, New York, has established a department called Education, which appears in what is known as the departmental issue, published in the middle of each month, of that periodical.

Of the publications listed in this bulletin, only those named in the section headed "Bureau of Education: Recent publications" are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or in the case of an association publication, from the secretary of the issuing organization.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PUBLICATIONS OF ASSOCIATIONS.

481. **American association of collegiate registrars.** Third annual meeting, Chicago, Ill., July 9 and 10, 1912. 53 p. 8°.

Contains: 1. The organization of administrative routine in twelve American universities, p. 9–15. 2. Salaries and status of college registrars, p. 19–24. 3. W. A. Hervey: The proper delimitation of the functions of the registrar's office, p. 27–39. 4. A. H. Espenshade: How we college registrars can promote our common welfare, p. 40–47. 5. A. G. Hall: A uniform blank for the transcript of a student's record, p. 48–53.

482. **Association of American law schools.** Proceedings of the twelfth annual meeting . . . held at Milwaukee, Wisconsin, August 26 and 27, 1912. 108 p. 8°. (Reprinted from the Transactions of the American bar association for 1912) (Walter W. Cook, secretary-treasurer, Chicago, Ill.)

483. **National council of teachers of English.** [Papers read at the meeting held November, 1912] English journal, 2:81–98, 109–21, February 1913.

Contains: 1. L. R. Brown: Some needed readjustments in the teaching of English grammar, p. 81–92. 2. Allan Abbott: A high-school course in drama, p. 93–98. 3. C. N. Greenough: An experiment in the training of teachers of composition for work with college freshmen, p. 109–15; Discussion, p. 115–21.

484. **National education association of the United States.** Journal of proceedings and addresses of the fiftieth annual meeting, held at Chicago, Ill., July 6–12, 1912. Ann Arbor, Mich., The Association, 1912. 1427 p. 8°. (D. W. Springer, secretary, Ann Arbor, Mich.)

General Sessions.

Contains: 1. C. G. Pearse: President's address, p. 130–36. 2. The National education association—the half-century mark—J. L. Pickard: Brief historical sketch of the first teachers association held in Chicago, Ill., p. 137–39; T. W. Bicknell: The rebirth of the Association in 1884, p. 139–45; J. W. Redway: The ideals of half a century, p. 145–51; J. M. Greenwood: The monuments: the achievements of fifty years, p. 151–57; Ellen C. Sabin: The coming half-century, p. 157–61. 3. The American high school—W. R. Siders: Its relation to the schools below, p. 161–68; Adelaide S. Baylor: Mortality in the early years: some administrative remedies, p. 168–73; A. D. Call: The specialized or vocational vs. the composite high school, p. 174–80; M. C. Potter: Social organization in the high school, p. 181–87; Kate U. Clark: What the public may expect in dividends: material, civic, and social, p. 187–93; W. H. Mearns: The worship of the "standard," p. 193–200. 4. A national university—E. J. James: The National association of state universities and the national university, p. 201–10; C. R. Van Hise: A national university a national asset; an instrumentality for advanced research, p. 210–20; J. H. Baker: A national university as related to democracy, p. 220–25; W. O. Thompson: Ways and means: the next steps, p. 225–30. 5. The relation of the public schools to the movement for recreational, social, and civic opportunity—Rowland Haynes: How a community may find out and plan for its recreation needs, p. 230–34; D. H. Perkins: The relation of schoolhouse architecture to the social center movement, p. 234–39; A. E. Bostwick: The public library, the public school, and the social center movement, p. 240–46; E. C. Stern: The organization and administration of recreation and social center work, p. 246–50; Herbert Quick: The social center and the rural community, p. 250–57. 6. The public schools and the public health—F. B. Dresslar: The duty of the state in the medical inspection of schools; results which the public may rightfully expect, p. 257–64; D. S. Jordan: The teaching of personal hygiene in the schools, p. 264–67; C. E. North: Sanitary education in rural communities, p. 267–73; C. A. L. Reed: The medical inspection of schools and medical freedom, p. 273–78; H. W. Wiley: Some problems in education as related to the public health, p. 278–80. 7. Rural life conditions and rural education—W. H. Wilson: A social and educational survey of the rural community, p. 281–86; T. R. Foust: What is being done to meet the problem by the schools of Guilford county, N. C., p. 286–91; L. R. Alderman: What is being done to meet the problem by the state of Oregon, p. 291–95; J. H. Worst: What is being done to meet the problem by the state of North Dakota, p. 295–301; Mrs. Frank De Garmo: The humanity of highways, p. 301–307; E. J. Russell: The school, the college, and the English farmer, p. 307–13. 8. A. E. Winship: The best next thing for the teaching profession, p. 313–16. 9. Bertha von Suttner: Peace and arbitration, p. 316–19. 10. Gerda Sebbelov: Camp fire girls, p. 320–22. 11. L. H. Gulick: The Camp fire girls and the new relation of women to the world, p. 322–27.

484. **National education association of the United States**—Continued.

Department of Superintendence (St. Louis meeting, 1912).

12. Organization affecting the course of study and economy of time—W. H. Elson: Waste and efficiency in school studies, p. 335–43; W. L. Stephens: Departmental teaching in the elementary grades, p. 343–49; D. E. Phillips: The child versus promotion-machinery, p. 349–55; D. H. Christensen: Some adjustments and changes in the course of study and school organization suggested by the needs and the capacities of children that vary from the standards set for average pupils, p. 355–68; J. H. Francis: A. reorganization of our school system, p. 368–76. 13. The determining of school efficiency—C. N. Kendall: The value of the educational commission in determining the efficiency of a city school system, p. 376–81; M. G. Brumbaugh: The relation of an urban community to its public-school system, p. 381–84; W. H. Allen: How may a community learn its unmet school needs? p. 384–87; G. H. Chatfield: Quantitative tests in education, p. 387–94. 14. Lucy Wheelock: The function of the kindergarten in the public-school system, p. 395–401. 15. Problems relating to child welfare—O. R. Lovejoy: The duty of superintendents in the enforcement of child-labor laws, p. 401–408; J. H. Van Sickle: How far shall the public-school system care for the feeble-minded? p. 408–11; C. G. Pearse: The city trade school—an important instrumentality for improving the vocational need of the city child, p. 411–16; G. P. Knox: How should the school system contribute to an intelligent choice of vocation on the part of the pupil? p. 417–25; L. D. Harvey: The education of girls, p. 425–30. 16. Meyer Bloomfield: Vocational guidance, p. 431–36. 17. E. J. Ward: The schoolhouse as the civic and social center of the community, p. 436–49. 18. F. A. Fitzpatrick: The bookman in his relation to the text book problem, p. 449–55. 19. J. R. Fulk: The effect on education and morals of the moving-picture shows, p. 456–61. 20. G. M. Wilson: The standardization of janitor service, p. 462–67. 21. E. O. Holland: The relative cost of education of high- and elementary-school pupils, p. 467–71. 22. Earl Barnes: The educational value of agriculture, p. 471–74. 23. E. C. Bishop: The next step in teaching agriculture in rural schools, p. 474–80. 24. A. W. Edson: Types of special schools in the larger American cities, p. 480–87. 25. J. T. Giles: The scientific study of arithmetic work in school, p. 488–92. 26. W. A. Wirt: Utilization of the school plant, p. 492–97.

National Council of Education.

27. Economy of time in education [by] J. H. Baker, J. H. Van Sickle, H. B. Wilson, F. E. Thompson, J. H. Francis, p. 507–26. 28. David Felmley: Preliminary report of committee on special high-school preparation of candidates for normal-school training, p. 526–34; Discussion, p. 534–40. 29. T. D. Wood: Health problems in education, p. 540–45. 30. R. W. Corwin: The school's responsibility for providing healthful environment and program, p. 545–49. 31. E. T. Fairchild: Preliminary report of committee on rural-school education, p. 549–56; Discussion, p. 556–59. 32. By what standards or tests shall the efficiency of a school or system of schools be measured? [by] G. D. Strayer, E. C. Elliott, 560–66; Discussion, p. 566–74. 33. Final report of the committee on high-school preparation of students for normal schools, p. 577–86; Discussion, p. 586–89. 34. J. A. Shawan: Educational progress of the year, p. 590–605.

Department of Kindergarten Education.

35. Florence E. Ward: The Montessori method, p. 609–13. 36. Carl Byoir: The presentation of Montessori material, p. 613–18. 37. G. F. James: The basic philosophy of Frœbel, p. 621–24. 38. Mary D. Bradford: The kindergarten and its relation to retardation, p. 624–29. 39. E. R. Downing: Live stock in public schools, p. 631–32.

Department of Elementary Education.

40. W. C. Bagley: The need of standards for measuring progress and results, p. 634–39. 41. E. E. Jones: Suggestions from cases of unusually rapid or irregular progress in public schools, p. 640–45. 42. C. A. Prosser: Practical arts and vocational guidance, p. 645–56; Discussion, p. 656–61.

Department of Secondary Education.

43. C. D. Kingsley: The report of the committee on the articulation of high school and college, p. 667–73. 44. J. C. Hanna: Unrest and wreckage, p. 673–80. 45. L. D. Coffman: The relation between supply and demand for high-school teachers, p. 681–86. 46. W. C. Bagley: The professional training of high-school teachers, p. 686–91. 47. O. W. Caldwell: The influence of prolonged and carefully directed work, p. 691–700. 48. S. R. Smith: Report of the committee on cosmopolitan high-school curriculum, p. 700–707. 49. J. F. Hosic: Report of the committee on college-entrance requirements in English, p. 707–13. 50. Ways and means of increasing the effectiveness of instruction in English composition—J. B. Davis: Vocational and moral guidance through English composition in the high school, p. 713–18; Eleanor Sheldon: Oral themes, p. 718–21; Mary E. Courtenay: An attempt to make oral composition effective, p. 721–25. 51. Ancient languages—A. S. Chenoweth: A plan to reduce failures in Latin, p. 725–27. 52. Modern languages—Amalie Nix: Methods of teaching German and the personality of the teacher, p. 728–31; Eduard Prokosch: The place of phonetics in high-school German, p. 733–34. 53. Mathematics—R. H. Jordan: The relation of the suggested geometry course to the manual-training course in high school, p. 735–38. 54. Science—V. G. Barnes: The high-school course in general science, p. 738–42; J. G. Coulter:

484. National education association of the United States—Continued.

Method in the general science course, p. 742–47. 55. The significance of recent investigations in the field of English—E. M. Hopkins: The labor and cost of composition teaching: the present conditions, p. 747–51; J. M. Clapp: Methods of amelioration, p. 751–54; H. G. Paul: Methods of amelioration, p. 755–58; V. C. Coulter: Desirable equipment for English work, p. 758–61; J. F. Hosic: Progress in articulating school and college English, p. 761–63; E. C. Noyes: Progress in standardizing the measurement of composition, p. 763–65.

Department of Higher Education.

56. J. R. Angell: A suggestion of a method for improving the relations of colleges and secondary schools, p. 768–72. 57. C. W. Dabney: The municipal university and its work, p. 773–80. 58. G. F. James: The relation of the state university to other parts of the system of public instruction, p. 780–83. 59. Samuel Avery: How to reach the individual student in our colleges and universities, p. 783–89. 60. A. R. Mead: How our colleges and universities maintain personal relations with the individual students . . . , p. 790–800; Discussion, p. 800–803.

Department of Normal Schools.

61. W. J. Hawkins: The attitude of the normal schools toward education, p. 810–16. 62. E. W. Bohannon: The work of the normal school in the reorganization of the elementary-school curriculum, p. 817–23. 63. E. E. Balcomb: The place of the normal school in agricultural education, p. 823–32; Discussion, p. 832–39. 64. Charles McKenny: Standards of measuring the efficiency of normal-school students, p. 839–45. 65. H. H. Seerley: Preliminary report of the committee of eleven on a plan of normal-school statistics, p. 845–50. 66. The function of the normal school—J. A. H. Keith: In academic education, p. 853–56; D. W. Hayes: In the special training of teachers for the rural schools, p. 856–62; A. C. Thompson: In relating theory and practice teaching so as to secure teaching efficiency, p. 862–66; W. S. Dearmont: In training teachers for the public welfare—civic, social, moral, religious, p. 866–72. 67. J. G. Crabbe: Securing and maintaining efficiency in the teaching force of normal schools, p. 872–80. 68. H. H. Seerley: First report of the committee of eleven on a plan of normal school statistics, p. 880–85. 69. City training schools and their management—G. B. Grumbine: The function of the normal school in training public-school supervisors in technical subjects: drawing, manual training, household arts, music, etc., p. 885–90; J. M. Willard: The problem of relating theory to observation and practice in the training of teachers for city schools, p. 890–96.

Department of Manual Training and Art Education.

70. C. B. Connelley: Citizenship in industrial education, p. 899–907. 71. W. T. Bawden: The relation of the elementary school to subsequent industrial education, p. 907–12. 72. Report of committee on college-entrance requirements, p. 915–18. 73. C. A. McMurry: The significance of the industrial arts in the schools, p. 918–21. 74. F. M. Leavitt: Some sociological phases of the movement for industrial education, p. 921–26; Discussion, p. 926–32. 75. F. D. Crawshaw: Needed changes in manual arts, p. 932–42. 76. W. H. Henderson: Is the introduction of technical subjects in the eighth grade advisable? p. 942–48; Discussion, p. 948–51. 77. C. R. Dooley: The manufacturers' viewpoint of industrial education, p. 952–54. 78. J. A. Pratt: Modern apprenticeship training, p. 955–58; Discussion, p. 958–65. 79. Mary S. Snow: Distribution of income, $500, $1,000, and $2,000 per year for family of five, p. 966–73. 80. Isabel Bevier: Dietetic standards for these various households, p. 974–82; Discussion, p. 982–83. 81. J. E. Griffith: The place of art in the high school of commerce, p. 984–88. 82. Walter Sargent: The value of art in the industrial school, p. 988–91. 83. T. Vernette Morse: Vocational training old and new, p. 994–1000.

Department of Music Education.

84. Will Earhart: A presentation of the high-school course which was adopted by the Music supervisors' national conference: what it is and how to administer it, p. 1004–1009. 85. P. C. Lutkin: Musical appreciation—how is it to be developed? p. 1009–13. 86. Eleanor Smith: The making of a musician, p. 1014–17. 87. C. A. Fullerton: The principles of scientific management applied to teaching music in the public schools, p. 1017–20. 88. P. W. Dykema: The awakening festival spirit in America—an educational opportunity, p. 1023–30.

Department of Business Education.

89. W. S. McKinney: President's address—a partial forecast of the report of committee on research, standardization, and correlation, p. 1034–37. 90. J. H. Beveridge: Efficiency in the business department of the high school, p. 1037–43. 91. W. B. Towsley: Training in salesmanship, p. 1043–46. 92. M. E. Pearson: An education for business, p. 1046–50. 93. W. B. Owen: The educational value of the high-school commercial course, p. 1051–56. 94. R. H. Whitbeck: Commercial geography, p. 1057–64. 95. I. B. Fee: Business courses for high schools of smaller cities, p. 1065–68. 96. Seymour Walton: Accountancy in relation to business organization and management, p. 1069–75. 97. J. H. Bachtenkircher: Essentials of practical penmanship, p. 1075–79. 98. T. L. Brecheen: A practical demonstration of the relation of a modern adding machine to accountancy in the high-school course, p. 1079–84. 99. Shorthand and typewriting—G. A. Bohlinger: Efficiency in practical details, or technique, of the highest importance, p.

484. **National education association of the United States**—Continued.

1084–88; S. A. Moran: Specialization with expert instruction requisite in order to meet the needs of the business world, p. 1088–92; O. D. Frederick: Intercommunication business practice, p. 1092–93.

Department of Child Hygiene.

100. W. H. Burnham: The problems of child hygiene, and the contribution of hygiene to education, p. 1096–1103. 101. F. B. Dresslar: The hygiene of rural schools, p. 1103–1110. 102. F. G. Bruner: The testing of children for mental efficiency, p. 1110–18. 103. E. O. Jordan: School diseases, p. 1118–24. 104. C. A. L. Reed: Stoop shoulders and flat chest in school children, p. 1123–31. 105. How far are teachers responsible for the morbidity and mortality of school children? [by] I. A. Abt, Hyman Cohen, L. N. Hines, p. 1132–39.

Department of Physical Education.

106. W. P. Bowen: The influence of play activities on racial physique and morals, p. 1142–46. 107. C. S. Hicks: The influence of faculty supervision on the moral effects of athletics in high schools and colleges, p. 1146–50.

Department of Science Instruction.

108. D. S. Jordan: President's address, p. 1154–56. 109. W. A. McKeever: Eugenics, p. 1156–60. 110. G. E. Dawson: A psychological classification of public-school pupils, p. 1161–66. 111. L. B. Allyn: Communal chemistry: how may the teaching of chemistry promote the well-being of the community? p. 1166–71. 112. J. F. Snell: Chemistry and household science, p. 1171–76. 113. G. A. Works: Applied botany, p. 1176–81. 114. J. A. Randall: Physics and the equipment problem, p. 1181–86. 115. J. H. McCurdy: A study in adolescent efficiency, p. 1186–93.

Department of School Administration.

116. C. A. Prosser: Facilities for industrial education, p. 1196–1202. 117. E. G. Cooley: Continuation schools, p. 1203–1207. 118. W. B. Ittner: School architecture, p. 1207–24. 119. Can the administration department of a school system serve as a laboratory for the industrial training of children? [by] G. E. Wulfing, Raymond Riordan, p. 1224–30. 120. What school facilities should be provided for instruction by means of motion-picture machines, stereopticon lanterns, phonographs, player-pianos, etc.? [by] W. H. Ives, Frances E. Clark, p. 1230–37.

Library Department.

121. H. E. Legler: Educational by-products in library work, p. 1241–46. 122. Julia A. Hopkins: The plans and scope of the new normal course in library training, Pratt institute school of library science, p. 1246–52. 123. Mary Ely: The book that teacher says is good, p. 1253–58. 124. Ida M. Mendenhall: Report of the committee on normal-school libraries: a syllabus of library instruction in normal schools, p. 1258–62. 125. A. E. Bostwick: The educated librarian, p. 1262–67. 126. J. B. Davis: The use of the library in vocational guidance, p. 1267–72. 127. Mary E. Hall: Report of the committee on high-school libraries, p. 1273–81. 128. Jessie E. Black: Courses in literature for children, p. 1281–84. 129. Florence M. Hopkins: Is there need for a course in the choice and use of books in our high schools? p. 1285–88.

Department of Special Education.

130. E. J. Emerick: The segregation of the defective classes, p. 1290–96. 131. Frances Wettstein: The training of the feeble-minded deaf, based upon impressions gained abroad, p. 1296–1301. 132. H. C. Henderson: The training of native impulses, p. 1301–1305. 133. J. A. Shawan: Report of committee on the prevention of blindness and conservation of vision, p. 1306–12. 134. E. W. Walker: The possibilities and limitations of the deaf mind, p. 1312–17. 135. J. B. Curtis: Some features of the education of the blind in public schools, p. 1318–21.

Department of School Patrons.

136. Mary P. Blount: Sexual reproduction in animals: the purpose and methods of teaching it, p. 1324–27. 137. W. A. Evans: The physical growth of the child and its hygiene, p. 1327–32. 138. W. H. Burnham: The selection of physical exercise as determined by the laws of growth, p. 1333–38. 139. Helen M. Hefferan: Report of the committee on school revenue, p. 1339–41. 140. E. J. Ward: Civic and social center development, p. 1353–63.

Department of Rural and Agricultural Education.

141. F. W. Miller: The betterment of rural schools through agriculture: the Ohio plan, p. 1366–73. 142. J. E. Delzell: The betterment of rural schools through boys' and girls' clubs: the Nebraska plan, p. 1373–74. 143. Van Evrie Kilpatrick: Rural school gardens differentiated from city school gardens, p. 1377–79. 144. E. R. Downing: The home garden and experimental plots, p. 1381–86. 145. E. R. Jackson: Forestry and the public schools, p. 1386–91. 146. E. C. Bishop: Report of the committee on courses of study in agriculture, p. 1391–93. 147. Josiah Mann: The high-school course in agriculture, p. 1393–98. 148. B. M. Davis: Agriculture in the rural schools. Course of study, p. 1398–1401. 149. R. O. Johnson: On a minimum course of study in agriculture for rural elementary one-teacher schools located in agricultural communities, p. 1401–13.

485. **Ohio school improvement federation.** Papers and addresses presented at the eleventh annual convention, held in Columbus, Ohio, December 26 and 27, 1912. Ohio teacher, 33: 290–327, February 1913.

Contains: 1. F. A. Derthick: Our rural schools, p. 290–91. 2. Alston Ellis: State support of public schools in Ohio, p. 291–94. 3. S. K. Mardis: A larger unit for school taxation and administration necessary, p. 294–300. 4. H. B. Williams: What professional training should the state require of inexperienced teachers? p. 301–304. 5. W. L. Fulton: The Bader bill for county supervision, p. 304–308. 6. J. J. Richeson: The Lowry bill for county and district supervision, p. 308–309. 7. J. R. Clarke: A personal superintendent for every township and village school, p. 310–14. 8. J. W. Zeller: A state board of education, p. 314–16. 9. E. F. Warner: The centralization of rural schools, p. 316–19. 10. H. L. Bates: The problems of centralization, p. 319–20. 11. J. L. Cadwallader: The centralization of schools, p. 320–21. 12. C. D. Laylin: The Smith 1 per cent tax law, p. 321–24.

486. **Pennsylvania state educational association.** Proceedings of the sixty-third meeting at Harrisburg, December 26, 27, and 28, 1912. Pennsylvania school journal, 61: 267–315, January 1913.

Contains: 1. E. H. Griggs: Influence of parent and teacher in moral education, p. 272–75. 2. R. P. Halleck: The efficient high school, p. 277–80. 3. George Wheeler: The six-year high school, p. 280–83. 4. V. K. Irvine: Mechanical side of the high school program, p. 283–85. 5. J. H. Van Sickle: The promotion of pupils, p. 285–87. 6. F. E. Downes: Promotion of pupils, p. 287–89. 7. Function of manual training in elementary schools, [by] M. B. King, p. 289; [by] W. L. Deffenbaugh, p. 289–91. 8. J. B. Ritchey: Relation of course of study to retardation, p. 291–92. 9. R. E. Laramy: Course of study and retardation, p. 292–93. 10. Mrs. Frank De Garmo: Relation of good roads to education, p. 294–96. 11. W. A. McKeever: Transformation of rural school, p. 297–98. 12. H. S. Curtis: The school as a social center, p. 300–303.

487. ———. **Department of city and borough superintendents.** Proceedings of the twenty-third annual session, at Harrisburg, December 26, 1912. Pennsylvania school journal, 61: 327–51, February 1913.

Contains: 1. C. C. Green: Business principles in public school administration, p. 327–30. 2. L. E. McGinnes: Are the public schools, as organized at present, designed to give practical preparation for life? p. 330–33. 3. S. H. Hadley: Practical preparation for life, p. 333–35. 4. H. E. Winner: Responsibility of public schools through medical care and hygiene, p. 335–38. 5. S. L. Heeter: Proper relation of the superintendent to the board, p. 338–42. 6. Charles Lose: Superintendent and school board, p. 342–44. 7. A. S. Martin: College entrance requirements, p. 344–47. 8. High school supervision, [by] J. J. Palmer, p. 347–49; [by] H. H. Baish, p. 349–51.

488. **Southern educational association.** Journal of proceedings and addresses of the twenty-third annual meeting, held at Louisville, Ky., November 28–30, 1912. Nashville, Tenn. [Press of Marshall & Bruce co., 1913?] 453 p. 8°. (W. F. Feagin, secretary-treasurer, Montgomery, Ala.)

Contains: 1. H. L. Whitfield: A discussion of the high school situation of the South, p. 37–54. 2. E. E. Rall: Educational criticism, p. 54–62. 3. D. A. Graves: The backward vs. the gifted child, p. 92–99. 4. C. C. Thach: Training for life work in our rural schools, p. 107–15. 5. W. H. Wilson: Social and educational survey in the country, p. 115–21. 6. Iva Scott: The home in its making on the farm, p. 136–42. 7. Annie E. Moore: Impressions of Montessori schools in Rome, p. 160–66. 8. R. L. Dimmitt: Our obligation to provide for trade and industrial education, p. 176–83. 9. D. C. Ellis: The forest and the school, p. 189–99. 10. M. P. Shawkey: The public school and efficiency, p. 200–206. 11. H. J. Willingham: Problems of state supervision, p. 244–47. 12. A. B. Dinwiddie: Summer school credits, p. 248–51. 13. McHenry Rhoads: Evaluation of vocational training, p. 258–63. 14. Fred Mutchler: Rural school course of study, p. 306–25. 15. J. J. Doyne: Function of the normal school in the preparation of teachers for the rural schools, p. 325–31. 16. O. I. Woodley: Function of the normal school in relation to the industrial branches and special subjects, p. 332–40. 17. Anne P. Kolb: Play as related to the school life of children, p. 353–60. 18. D. C. Ellis: A new aspect of the boy scout movement, p. 360–66. 19. W. H. Varnum: Pedagogic basis of design, p. 380–91. 20. Lucy Fay: Suggestive outline of a course for training teachers in the use of books, p. 392–97. 21. Irene T. Meyers: Adaptation of the curricula of our schools to women and girls, p. 417–22.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

489. Latin-American universities and special schools, by Edgar Ewing Brandon. Washington, 1913. 153 p. illus. (Bulletin, 1912, no. 30)

490. College entrance requirements, comp. by Clarence D. Kingsley. Washington, 1913. 110 p. (Bulletin, 1913, no. 7)

BOOKS, PAMPHLETS, PERIODICAL ARTICLES.

GENERAL REFERENCE WORKS.

491. A cyclopedia of education, ed. by Paul Monroe. Volume 4. Lib-Pol. New York, The Macmillan company, 1913. xiii, 740 p. illus. 4°.

EDUCATIONAL HISTORY.

492. **Finegan, Thomas Edward.** The establishment and development of the school system of the state of New York. Syracuse, N. Y., C. W. Bardeen, 1913. 84 p. 12°. (School bulletin publications)

Address delivered before the New York state teachers' association at Buffalo, November 26, 1912. Revised by the author.

493. **Huxoll, A.** Deutsche erziehungsideale von den ältesten zeiten bis zur gegenwart. Pädagogische warte, 20 : 125–32, February 1, 1913.

"The educational ideal of an age is the best index of its state of civilization." With this as a basis the author summarily reviews Germanic history from the Cimbri and the Teutones down through Scharrelmann and Paulsen.

494. **Sohm, Walter.** Die schule Johann Sturms und die kirche Strassburgs in ihrem gegenseitigen verhältnis, 1530–1581; ein beitrag zur geschichte deutscher renaissance. München und Berlin, R. Oldenbourg, 1912. xiv, 317 p. 8°.

PRESENT SITUATION.

495. **Chancellor, William E.** The genuine democracy of the unique school system of Buffalo. American school board journal, 56 : 9–12, 53–55, March 1913.

"This is a report of a ten days' observation of the schools of the city of Buffalo. . . The report deals first and mainly with the observed facts, and secondly, and but incidentally, with some tentative opinions."

496. **Dawes, T. R.** School reform in Germany. School world, 15 : 47–49, February 1913.

The dissatisfaction with the schools in Germany caused the formation several years ago, of a League for school reform. The various ways in which the reforms of this league have affected the schools, is briefly told.

497. **Gray, Mary Richards.** Some public schools that are not failures. I. The public schools of Los Angeles. Popular educator, 30 : 365–71, March 1913.

498. **Greenwood, James M.** Report of a visit to some schools. Missouri school journal, 30 : 98–103, March 1913.

Results of a recent visit to the schools of St. Louis, Cleveland, Boston, New York, Detroit Milwaukee, and Chicago.

499. **Grey, Francis W.** Education and nationality. University magazine, 12 : 106–15, February 1913.

Discusses education in Canada.

500. **Lanson, Gustave.** Trois mois d'enseignement aux États-unis. Notes et impressions d'un professeur français. Paris, Hachette et cie., 1912. 298 p. 12°.

Has introduction addressed to President Butler, of Columbia university, where the writer served as exchange professor, and contains a chapter of observations on the plan of professorial exchanges between American and French universities. Includes tables showing relative number of students taking French and German in American secondary schools.

PEDAGOGICS AND DIDACTICS.

501. **Buckham, Matthew Henry.** The very elect. Baccalaureate sermons and occasional addresses. With biographical notes and studies in appreciation. Boston, New York [etc.]. The Pilgrim press [1912] 372 p. front. (port.) 8°.
A volume in memory of the late president of the University of Vermont.

502. **McKeever, William A.** Training the boy. New York, The Macmillan company, 1913. xviii, 368 p. illus. 12°.
The author's purpose has been "to attempt to sketch a practical plan for rounding out the whole boy, and to place the emphasis upon all rather than some of the forces necessary for such complete training."

503. **Mann, C. R.** Physics and daily life. Science, 37: 351–60, March 7, 1913.
"Presented at the conference of the University of Illinois with the secondary schools of the State, November 22, 1912."
Advocates the closer union of education and life, and claims that uniformity in the course of study is doing most to keep education and life asunder.

504. **Nearing, Nellie S.** *and* **Nearing, Scott.** Fitting the public schools to the children. Ladies' home journal, 30 : 20, 74, March 1913.
Emphasizes the creative activity of children, and the necessity of the school to meet this phase of child life.

505. **Winship, A. E.** Is culture jeopardized? Independent, 74 : 528–29, March 6, 1913.
Writer discusses the question: "Is culture jeopardized by the nonculture courses permitted by the elective system in high schools and colleges?" His answer is an emphatic "no."

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

506. **Adamson, J. W.** Attention—The child's point of view. School world, 15: 41–43, February 1913.
A consideration of the mental attitude called attention, from the practical point of view. The secret of securing attention is to interest the child and to develop the presence of a purpose. "The teacher therefore builds upon the purpose lodged in the pupil's mind, if possible upon the pupil's cherished schemes."

507. **Bruce, H. Addington.** Making the most of childhood. The marvelous development possible in all normal children as demonstrated by certain wise parents. Good housekeeping, 56 : 332-40, March 1913.
Discusses in particular the development of Winifred S. Stoner, jr., of Pittsburgh, Pa., the Berle children, of Cambridge, Mass., and the Wiener children of the same place.

508. **Jones, Elmer E.** Individual differences in school children. Psychological clinic, 6 : 241–51, February 15, 1913.
Gives the results of a series of tests made of school children, showing their individual differences.

509. **Kirkpatrick, Edwin A.** Fundamentals of child study; a discussion of instincts and other factors in human development, with practical applications. New ed., rev. New York, London, The Macmillan company, 1912. xxi, 384 p. 12°.
"Child study literature": p. xix–xxi.
"Alphabetical list of books named in the suggestions for reading": p. 371–377.

510. **Lobsien, Marx.** Die experimentelle ermüdungsmessung. Zeitschrift für kinderforschung, 18 : 201–12, February 1913.
Describes physical methods of measuring fatigue, i. e., dynamometer, ergograph, Weichardt's, Schulze's writing method, etc. A continued article.

SPECIAL METHODS OF INSTRUCTION.

511. **Wyche, Richard T.** The story tellers' league. Reviving an art older than literature—75 local leagues from Boston to Omaha. World's work, 25 : 588–90, March 1913.

SPECIAL SUBJECTS OF CURRICULUM.

512. **Archibald, R. C.** Mathematical instruction and the professors of mathematics in the French lycées for boys. [Mount Morris, Ill., 1913. 27 p.] 8°.
Revised reprint from School science and mathematics, 13 : 43–56, 105–17, January, February 1913.

513. **Ayres, Leonard P.** The spelling vocabularies of personal and business letters. New York city, Division of education, Russell Sage foundation, 1913. 14 p. diagrs. 8°. ([Russell Sage foundation. Dept. of child hygiene. Pamphlet.] E126)
Dr. Ayres has examined 2,000 business and personal letters and tabulated words actually used in them. A comparison of these words with the vocabularies of the usual school spelling lists shows that to a very large extent the latter are unadapted to ordinary intercourse.

514. **Bradley, R. H.** Aristotle's views on music, and their relation to modern ideas. Westminster review, 179 : 158–68, February 1913.
According to Aristotle education is political, moral, and artistic. The value of music in general education, which was emphasized by the Grecian philosopher, is gradually becoming recognized in modern times.

515. **Burr, A. W.** Is Latin an end or a means in our schools? Wisconsin journal of education, 45 : 35–37, February 1913.

516. **Cross, E. A.** An experimental course in English. Education, 33 : 410–16, March 1913.
Writer says that before "one rearranges a course in English one has to consider what the college is going to do with the high school graduate who has not had the prescribed English course."

517. **Garig, Mercedes M.** Drill in English. [Baton Rouge] The Book store, Louisiana state university, 1912. 157 p. 8°.

518. **Genthe, K. W.** Das system der höheren schulen Americas und der biologische unterricht. Monatshefte für den naturwissenschaftlichen unterricht, 6 : 89–117, heft 2, 1913.
This installment discusses the elective system in the high schools and colleges; arrangement of instruction in the high school; methods in school and college, etc. So far the discussion is almost entirely general, with little reference to the subject of biology.

519. **Gillette, John M.** Sociology as a high-school subject. Educational review, 45 : 256–62, March 1913.
Declares that high-school men favor the introduction of sociology in the high-school course. Much experimenting, however, will have to be done to properly adapt subject and text to the secondary schools.

520. **Hess, John A.** Teaching elementary German at a State university. Monatshefte für deutsche sprache und pädagogik, 14 : 41–47, February 1913.
Continuing his discussion of the "compromise method," the writer gives in brief two or three model lessons which he says he has found workable and satisfactory. Recommends the compromise method as a safe transition to the direct method.

521. **Kelsey, Francis W.** The eighteenth Michigan classical conference. School review, 21 : 191–200, March 1913.
Review of proceedings and résumé of papers read.

522. **Krause, Carl A.** The trend of modern language instruction in the United States. Educational review, 45 : 237–48, March 1913.
Advocates the direct method. Defines it as "a direct appeal to the learner through the foreign language. In other words, it teaches the language and not merely about the language."

523. **McWhorter, Ashton W.** The place of Greek in the educational system of our state. Virginia journal of education, 6 : 200–209, February 1913.
"Paper read before the State classical association in Richmond, November 29, 1912."

524. **Miller, George J.** A high-school course in field geography. School review, 21 : 171–79, March 1913.
Work done by students of the University high school, Chicago, Ill.

525. **O'Neill, J. Milton.** Debating as a college sport. Public speaking review, 2 : 161–65, February 1913.

526. **Tesson, Louis J.** Oral instruction in modern languages. Education, 33: 428–36, March 1913.

527. **Vogel, William.** The practical side of public school art. Western school journal, 29 : 74–75, February 1913.
Address delivered before the Drawing round table of the Kansas state teachers' association.

528. **Whitney, Worrallo.** Science in the high schools, an investigation. School science and mathematics, 13 : 183–96, March 1913.
"From the report of a committee appointed by the State Academy of science of Illinois to 'investigate the relations of the pure and applied sciences in high schools,' Transactions vol. v, 1912."

529. **Williams, Talcott.** Instruction in journalism. Journal of education, 77: 201–202, February 20, 1913.
Address before the Conference of the teachers of journalism at Chicago, November 30, 1912.

530. **Wolfe, A. B.** The aim and content of the undergraduate economics curriculum. Journal of political economy, 21 : 1–17, January 1913.

KINDERGARTEN AND PRIMARY SCHOOL.

531. **Boone, Richard Gause.** The Montessori method. Sierra educational news, 9 : 113–21, February 1913.
To be continued.
"Read before the elementary section of the State teachers' association held in San Francisco, January 1, 1913."

532. **Morris, Hattie Ellen.** The relation of the kindergarten to the grades. Ohio teacher, 62 : 103–106, March 1913.

533. **Watkins, Catharine R.** Washington schools and kindergartens. Kindergarten review, 23 : 425–30, March 1913.

534. **Welles, Nancy.** The benefits of the kindergarten. Kindergarten review, 23 : 457–60, March 1913.
"This essay won the third prize offered by the National kindergarten association for articles on the benefits of the kindergarten."

RURAL EDUCATION.

535. **Craig, George E.** Rural betterment. Northwest journal of education, 24 : 309–12, March 1913.
Address given before the Farmers' educative and cooperative union of Spokane county, Washington, January 4, 1913.

536. **Gates, Frederick T.** The country school of to-morrow. New York city, General education board, 1913. 15 p. 8°. (Publications of the General education board. Occasional papers, no. 1)

537. **Gillette, John M.** Constructive rural sociology. With an introduction by George E. Vincent. New York, Sturgis & Walton company, 1913. xiii, 301 p. 8°.
The following chapters are of special interest to educators: 13. Socialization of country life. 14. Rural social institutions and their improvement. 15. The church. 16. Adjustment of education to rural needs. 18. Rural social surveys.

538. **Monahan, A. C.** State aid for rural education. Business America, 13 : 238–40, March 1913.
"Evidently Mr. Monahan believes that one of the most pressing questions at this time is the question of more adequate financial aid from the state itself, supplementing what in large areas of our country is wholly insufficient local support for schools."—Editor's note.

539. **Winship, A. E.** Consolidation and transportation. Journal of education, 77 : 257–58, March 6, 1913.
Describes the ideal system of transportation as used in Burley, Idaho.

SECONDARY EDUCATION.

540. **Burk, Frederic.** A high school that would really educate. Ladies' home journal, 30:19–20, March 1913.

Writer would rest the high school course upon a six-year elementary school. Treats of vocational teaching as it is and as it should be. He says: "With pitifully few exceptions, vocational teaching within the schools has been of an admittedly amateur character. . . . The faculty of the new high school vocational department should be composed of men of trained experience in their vocations."

541. **Caldwell, Oris W.** The laboratory method and high-school efficiency. Popular science monthly, 82:243–51, March 1913.

Points to fact that for twenty years there has been "no increase in the percentage of pupils who complete a high school course." Ascribes the failure to carry school work as one prominent factor in the elimination of pupils from school. Advocates a longer school day.

542. **Gayler, G. W.** A comparative study of the two types of high schools of Illinois. School and home education, 32:223–26, February 1913.

The author gives data showing that township high schools are better financed than city high schools, and that it costs more per capita to finance the schools in cities where there are two boards of education than in those where all schools are under the management of one.

543. **Mackie, Ransom A.** Progressive high school reorganization. Education, 33:420–27, March 1913.

Conclusion of article in Education for February 1913. Reviews the Berkeley plan—the six-year high school. Gives the course of study, etc. Sums up the advantages of the plan.

544. **McLane, C. L.** The junior college, or upward extension of the high school. School review, 21:161–70, March 1913.

Work accomplished in California. The first movement toward making use of the "upward extension" law was made by the city superintendent of the Fresno schools in June 1910. The legislature of California in 1907 passed a law giving high schools the authority "to extend the scope of their work to include two years of college training."

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

545. **Förster, F.** Die neugestaltung der zweiten lehrerprüfung in Preussen. Zeitschrift für philosophie und pädagogik, 20:194–99, February 1913.

Discusses the new Prussian regulations on the second license examination, to go into effect April first.

546. **National education association of the United States. Committee on teachers' salaries and cost of living.** Report. Ann Arbor, Mich., The Association, 1913. xx, 328 p. diagrs. 8°.

547. **Parkinson, William D.** Equal pay or equal service. Educational review, 45:249–55, March 1913.

Says: "The only way that the children of our public schools can possibly be brought under men and women of approximately equal quality, who can work together upon approximately equal terms and render to the children substantially equal service, is to permit a higher wage to the men."

548. **Russell, James E.** Professional factors in the training of the high school teacher. Educational review, 45:217–36, March 1913.

Author says that "the distinctive professional factors in a teacher's training are (1) specialized knowledge of the subjects to be taught; (2) technical skill in teaching, and (3) the ethical aim of education."

549. **Smart, Frank L.** The training of teachers in Iowa. Midland schools, 27:196–200, March 1913.

Deals with some results of the investigation made by the Committee on facilities for the training of teachers of the Better Iowa schools commission.

550. **Starkey, Alice G.** A plea for more normal training in the colleges. Education, 33:437–39, March 1913.

Recommends pedagogical courses of a practical nature similar to those used in normal schools, with practical school work for seniors who are prospective teachers.

551. **Stege, Margarete.** Die lage der privatschullehrerinnen mit rücksicht auf die für sie in frage kommenden versicherungen. Frauenbildung, 12:6–19, heft 1, 1913.

Plight of the private school teachers and measures for their relief.

552. **Suzzallo, Henry.** The organization of the teaching profession. Sierra educational news, 9:121–28, 198–204, February, March 1913.

Discusses particularly what does or will make teaching a truly professional service.

553. **Welton, James.** Th training of teachers. School world, 15:49–52, February 1913.

The training college is only one of the agencies in the development of teachers and should "aim primarily at giving an attitude of mind and feeling; at inculcating a few fundamental principles and securing that each student applies these in his own way."

HIGHER EDUCATION.

554. **Aley, Robert J.** Transition of pupils from Maine high schools to the University of Maine. Journal of education, 77:258–60, March 6, 1913.

555. **Boutroux, Emile.** The thought of America and of France. Educational review, 45:269–88, March 1913.

A lecture delivered in Paris under the auspices of the Comité France-Amérique. Translated from the author's manuscript by Miss Sarah Schuyler Butler. For original French version, see item 403 in Record for March 1913.

Author says that technical and advanced studies are at present very popular in France; but these special studies are not developed at the expense of the humanities.

556. **Canby, Henry S.** The undergraduate. Harper's monthly magazine, 126:592–98, March 1913.

Writer says we must "intellectualize the business and scientific energy of the country (for it is just that which the undergraduate displays in his blind and immature fashion)."

557. **Mendes dos Remédios, Joaquim.** A Universidade de Coímbra perante a nova reforma dos estudos. Revista da Universidade de Coímbra, 1:589–622, December 1912.

Of interest as illustrating the present educational revival in the Portuguese Republic.

558. **Printz, Wilhelm.** Der Hamburger universitätsplan. Akademische rundschau, 1:268–77, February 1913.

Describes the plan for a University of Hamburg recently decided upon by the Senate of that city.

559. **Sturt, Henry.** A British university in London. Westminster review, 179:151–57, February 1913.

Shows the demand for a great national institution placed in the center of London, well endowed and equipped, which can be compared with the universities of Paris, Berlin, Vienna, etc.

560. **Williams, Charles W.** His all-round excellency, the college president. What is required of the executive of an American institution of higher education. Independent, 74:499–503, March 6, 1913.

SCHOOL ADMINISTRATION.

561. The facts about school book costs. An interview with the manager of a leading textbook house. American school board journal, 46:13–14, 52, March 1913.

"The interview embodies essential points recognized by all and is the first answer ever published anywhere to the critics of the book-publishing business."

562. **Moore, Ernest Carroll.** How New York city administers its schools. A constructive study. Yonkers-on-Hudson, N. Y., World book company, 1913. x, 321 p. 12°. (School efficiency series, ed. by P. H. Hanus, vol. 1)

Contains complete text of Professor Moore's report in the New York school inquiry.

Appendix A, p. 241–97, gives the author's answers to the "241 questions" which were asked "to test the reliability of the report."

In the Editor's preface to this book, Professor Paul H. Hanus says: "Professor Moore's report is an exceptionally valuable document. On the basis of a comprehensive, clear, and convincing exposition of existing conditions, it points out the way to progressive improvement in the administration of the public-school system of the city of New York; but because similar conditions are common throughout the country, we hope the book will be helpful to all who are interested in school administration."

563. **North Dakota. Temporary educational commission.** Report . . . to the governor and legislature of the State of North Dakota. [Bismarck] 1912. 61 p. 8°.

564. **Pearse, P. H.** The education problem in the home rule Parliament. Irish review, 2 : 617–20, February 1913.
Education in Ireland. An anticipation.

SCHOOL MANAGEMENT.

565. **Farley, George L.** Causes of nonpromotion. Psychological clinic, 6:256–59, February 15, 1913.
Gives the results of an investigation of the pupils in the Brockton grade schools in June, 1912, showing the reasons of nonpromotion.

566. **Hughes, Harold F.** Suiting the course to the child. Fresno's system of grading. American school board journal, 46:15, 52–53, March 1913.
Explains the system of grading in the schools of Fresno, California, giving the advantages and the possible disadvantages.

567. **Lose, Charles.** The problem of the nongraduate. Journal of education, 77:204–205, February 1913.
Discusses the problem of the boy and girl who leave school before finishing the high school.

568. **Work, H. B.** Some factors of class control. West Virginia school journal, 41:457–60, March 1913.
Offers a number of suggestions which bear on the conduct of the recitation from what might be termed the mechanical or routine side.

SCHOOL SANITATION AND HYGIENE.

569. **Bates, Mary Elizabeth.** The Colorado method for the examination and cure of public-school children. American academy of medicine. Bulletin, 14:66–87, February 1913.
Cites Colorado law, 1909. Gives circular letter of instructions on the modus operandi of the law; record blanks, tests, letters to parents, etc.

570. **Bryant, Louise Stevens.** School feeding; its history and practice at home and abroad. With an introduction by P. P. Claxton. Philadelphia and London, J. B. Lippincott company [1913] 345 p. illus. 12°.
CONTENTS: 1. History and present status of the school feeding movement. 2. Physical deterioration and malnutrition in England. 3. Provision of meals in the public elementary schools of Great Britain. 4. The cantines scolaires of France. 5. School meals in German municipalities. 6. School feeding in other European countries. 7. Lunches in American elementary schools. 8. Provision of meals in open-air schools. 9. Investigations of underfeeding among American school children. 10. Malnutrition in childhood. 11. The food needs of growing children. 12. School menus. Bibliography. Appendix.

571. **Cooke, Katherine.** School hygiene. Trained nurse, 50 : 146–49, March 1913.
Writer particularly commends the Philadelphia high school for girls for work accomplished in medical inspection.

572. **Parris, Thomas G.** School medical inspection—increasing its efficiency. Teacher, 17 : 75–78, March 1913.

573. **Rapeer, Louis W.** The reorganization of health provisions in school systems. Journal of education, 77 : 228–30, February 27, 1913.
"A plea for the physician-physical-educator on full time as director of all health and physical development agencies in a public school system."

574. **Roach, Walter W.** Revitalizing devitalized children—an open window experiment. [New York, 1913.] 13 p. illus. 8°.
Reprinted from American journal of public health, vol. 3, no. 2.
A comparison between the progress of pupils taught in an open window class-room and that of the pupils of a parallel grade taught in an ordinarily ventilated and heated class-room in the same school building, Philadelphia.

575. **Whipple, Guy Montrose.** German teachers and some observations on the "Forest school" at Charlottenburg. School and home education, 32 : 201–204, February 1913.

SEX HYGIENE.

576. **American federation for sex hygiene.** Report of the special Committee on the matter and methods of sex education. Presented before the subsection on sex hygiene of the fifteenth International congress on hygiene and demography, held in Washington, D. C., September 23–28, 1912. New York city, American federation for sex hygiene [1913] 34 p. 8°.

Members of Committee: M. A. Bigelow, T. M. Balliet, P. A. Morrow.

"A document which summarizes the opinions of college presidents, teachers and social workers throughout the entire country on a vital matter of public health and public morals."

This pamphlet may be obtained from the American federation for sex hygiene, Tilden building, 105 West 40th st., New York city.

Report also in Association seminar, 21: 187–97, February 1913.

577. **Putnam, Helen C.** Education for parenthood. American academy of medicine. Bulletin, 14:55–65, February 1913.

Discusses sex-hygiene and sex instruction.

578. **Shields, Thomas Edward.** Survey of the field—Sex enlightenment. Catholic educational review, 5:230–49, March 1913.

579. **Wile, Ira S.** Sex education. New York, Duffield and company, 1912. 150 p. 12°.

Bibliography: p. 147–50.

580. **Willson, Robert N.** The education of the young in sex hygiene. A textbook for parents and teachers. Philadelphia [Press of W. H. Beaver] 1913. 319 p. illus. 8°.

"Aims to reach and help the quiet, sane thinkers, especially the parents and teachers of children."

PLAY AND PLAYGROUNDS.

581. **Bowen, Wilbur P.** The meaning of play. American schoolmaster, 6:49–60, February 1913.

Bibliography: p. 59–60.

582. **Smergalski, Theodore J.** The administration of an individual playground. Mind and body, 20:1–7, March 1913.

"This applies to a recreation type of playground, such as is found in Pittsburgh, Chicago, Los Angeles, etc."

SOCIAL ASPECTS OF EDUCATION.

583. **King, Irving.** The opportunity afforded by the social life of the school. Religious education, 7:604–11, February 1913.

584. **Meyer, —.** Staatsbürgerliche erziehung. Archiv für pädagogik, 1:257–83, February 1913.

One of many articles of more or less value going through the press on "Education for citizenship." This article is chiefly interesting because written by an army officer. To be continued.

585. **Sloss, Robert.** Our new industrial conservation. III.—"Humanizing": An overhead expense. Harper's weekly, 57:8–9, March 1, 1913.

The last of three papers dealing with various aspects of the movement for improving the efficiency of labor, etc. This paper treats of the social and educational aspects of the question.

CHILD WELFARE.

586. **Coulter, Ernest K.** The children in the shadow. With an introduction by Jacob A. Riis. New York, McBride, Nast & company, 1913. xvii, 277 p. illus. 12°.

MORAL AND RELIGIOUS EDUCATION.

587. **Hall, Florence Howe.** Boys, girls and manners. Boston, Dana Estes & co. [1913] 323 p. 12°.

Contains chapters on manners at boys', girls', and coeducational schools, at boarding school, at college, at women's colleges, and on class day and commencement festivities.

588. **Kimball, Dorothy E.** Convent schools in America. Educational review, 45 : 263–68, March 1913.

A sympathetic study of the convent school. Writer, however, does not hesitate to criticize methods pursued.

589. **Morse, Josiah.** The elements of character. An essay for young people. New York, Broadway publishing co., 1912. 86 p. 12°.

"Written for young people who have ambition to become somebody and accomplish something worth while," by the professor of psychology and philosophy in the University of South Carolina.

590. **Sharp, Frank Chapman** *and* **Neumann, Henry.** A course in moral education for the high school. Religious education, 7 : 653–80, February 1913.

"This article first appeared in the School review, of April, 1912, but for this publication has been thoroughly revised by Prof. Sharp and new paragraphs have been inserted."—Editor.

MANUAL AND VOCATIONAL TRAINING.

591. Bridging the gap; a stage in the cooperation of education and employment. School government chronicle, 89 : 136–37, 156–57, February 8 and 13, 1913.

A discussion of the system of cooperation between the education authorities and employers in Edinburgh, Scotland, in promoting education through the continuation school.

592. **Buchenau, A.** Die voraussetzungen des Kerschensteinerschen begriffs der arbeitschule. Die deutsche schule, 17 : 65–70, February 1913.

A thoughtful criticism of Kerschensteiner's idea of the "Arbeitschule" and its purpose in training for citizenship. "The most important basic idea of the whole movement is that it involves the social significance of the 'community of labor.'"

593. **Butler, Nicholas Murray.** Vocational preparation as a social problem. Educational review, 45 : 289–97, March 1913.

Address before the educational committee of the Commercial club, of Chicago, Ill., December 14, 1912. Writer says: "To use existing industries, whether they be those of the farm, those of the shop, or those of the factory, as schools of apprenticeship, observation and training while the formal instruction goes on side by side for the one or two years' period provided—this is the essential point in the whole matter."

594. **Edlmann, Edith.** Education and peasant industry. Some state and state-aided trade schools in Germany. London, H. M. Stationery office, 1912. iv, 61 p. 8°. ([Gt. Brit.] Board of education. Educational pamphlets, no. 26)

595. **Forbes, George M.** Organization and administration of industrial schools. Vocational education, 2: 278–88, March 1913.

An analytical discussion of the Rochester experiment, presenting the results of a carefully organized attempt to solve some practical problems.

596. **Furney, Oakley.** Education with an aim to service. Vocational education, 2 : 299–317, March 1913.

This article, by the director of vocational education in the public schools of Albany, New York, gives certain practical details of the work in the vocational schools of that city.

597. **Hedges, William.** A year of prevocational work. Educational bi-monthly, 7 : 191–202, February 1913.

Describes the prevocational work carried on in the Jackson school, Chicago, Ill.

598. **Henderschott, F. C.** Corporation schools. A new form of vocational training recently organized in a national association. Independent, 74 : 519–23, March 6, 1913.

An exposition of what has been accomplished by the New York Edison company in institute educational work among its commercial or sales force.

599. **Levin, Samuel M.** Improvement of elementary evening schools. Education, 33 : 399–409, March 1913.

Recommends broadening the curriculum, by the selection of earnest and competent teachers, by "the use of texts adapted to the specific needs of grown-up foreigners," etc.

600. **Mather, William.** The cooperation of employers and educational authorities. School world, 15 : 52–55, February 1913.

Since the large majority of children complete their schooling in the elementary grades, all employers who depend upon the services of the younger generation, are under moral obligation to assist the educational authorities in giving these children further training through evening and continuation schools. The employers should assist in compelling attendance at these schools. This would result in greater ability for the worker with resultant benefit both to himself and to employer.

601. **Mearns, William Hughes.** The land-babies. Caring for children who leave school. Saturday evening post, 185 : 12–13, 41–43, March 1, 1913.

Advocates vocational training and continuation schools. Shows work done by consumers' leagues and schoolmen in studying condition of children who leave school at 14 and 16. Illustrated.

602. **Miles, H. E.** Work and citizenship. The Wisconsin experiment in industrial education. Survey, 29 : 682–85, February 15, 1913.

By the president of the Wisconsin State board of industrial education.

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UNITED STATES BUREAU OF EDUCATION
BULLETIN, 1913: NO. 12 - - - - - - WHOLE NUMBER 519

THE PROMOTION OF PEACE

I. SUGGESTIONS FOR THE OBSERVANCE OF PEACE DAY (MAY 18) IN SCHOOLS

II. AGENCIES AND ASSOCIATIONS FOR PEACE

COMPILED BY

FANNIE FERN ANDREWS

SECRETARY OF THE AMERICAN SCHOOL PEACE LEAGUE

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., February 21, 1913.

SIR: Within the past few years the subjects of international peace and arbitration have come to have a place of importance in schools of all grades in the United States, and the interest in these subjects is increasing from year to year. As one means of fostering this interest many schools observe in a special way the 18th day of May, the anniversary of the assembly of the first Peace Conference at The Hague. On this day the schools give an hour or two to a program of addresses, readings, and recitations pertaining to the subject. Frequently addresses are made by prominent men and women of the community. Anything that gives effective help toward these programs is eagerly sought by teachers and school officers. A bulletin of this bureau entitled "Peace Day: Suggestions and Material for its Observance in the Schools," issued last year, was called for to the extent of about 50,000 copies. There is now a demand for accurate and comprehensive information in regard to the various organizations and agencies working for international peace, as well as for suitable brief articles on the great principles of the movement, and for poems and quotations of an inspirational nature. To meet this demand I recommend that the accompanying manuscript, prepared by Mrs. Fannie Fern Andrews, secretary of the American School Peace League and special collaborator in the Bureau of Education, be published as a bulletin of this bureau.

Respectfully submitted,

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

SUGGESTED PROGRAM FOR THE 18TH OF MAY.

MUSIC

Recessional — Music: De Koven; Words: Kipling

RECITATIONS

The Reign of Peace — Eliza Thornton
Illusions of War — Richard Le Gallienne

ESSAY

The Significance of the Two Hague Conferences

MUSIC

The Coming Day of Peace — Tune: "Battle Hymn of the Republic"
God Bless Our Fatherland — Tune: "America"; Words: O. W. Holmes

ESSAY

The Hundredth Anniversary of Peace among English-Speaking Peoples

RECITATIONS

From "A Voice from the West" — Alfred Austin
The Soldier's Recessional — John H. Finley

MUSIC

Song of Peace — Music: A. S. Sullivan; Words: M. K. Schermerhorn

QUOTATIONS

What Soldiers and Statesmen have Said about War

MUSIC

Ring in the Larger Heart — Tune: Ward Lowell Mason—L. M.; Words: Tennyson

RECITATION

Ode Sung at the Opening of the International Exhibition — Tennyson

MUSIC

America — S. F. Smith

THE PROMOTION OF PEACE.

THE OBSERVANCE OF PEACE DAY.

By M. Ferdinand Buisson, Paris, France.

Député de Paris; Ancien Directeur de l'Enseignement Primaire; Président de la Commission de l'Enseignement à la Chambre des Députés.

To set aside one day in the year in our schools as the holiday of humanity, placing it above our national days, would mark a new chapter in public education. The pages of that chapter are as yet a blank which time will fill and illuminate.

From now on, we can tell our children—we must tell them—that the time is near when men will work out the miracle of learning how to live as men ought to live; when nations, as well as individuals, will repudiate force and brutality as the supreme means of settling their differences. This time has not yet come. To hasten its coming, we might ask the youth to think and speak about it at least once a year. Such progress does not require the genius of an Archimedes or a Newton, but must spring up irresistibly from the conscience of the young generation, and from the universal will of men, independent of races, classes, and tongues. Children, you must all prepare for it, as you are the ones who will be called upon to work out these problems.

Peace Day! Let it shine one day in the year among all nations. The whole year is consecrated, as it ought to be, to the promotion of love of country, to teaching our duties toward our country, to the extent even of sacrificing ourselves for her. On this special day, however, it is in order not to forget our country, but to see it transfigured in the future, to see it lead in the movement which fraternally binds one nation to all others, making a sort of superior country, the federation of the United States of the Civilized World. Let Peace Day shine once a year, among all classes of society. During the entire year, we study the laws which regulate their relations, that is to say, their conflicts; but on this day we should anticipate the future. We shall see in the distance a society where civil and economic wars, as well as all other wars, shall have disappeared. We may dream of a social peace accompanying international peace, of the end of the struggle of classes, through the disappearance of classes. We shall

no longer witness the duel between capital and labor, since there will be no longer men who own without working, nor men who work without being owners.

Dreams, they say; distant dreams and idle fancies. Perhaps, but such dreams are an inherent part of our love for life, and such chimeras are indispensable to the growth of man. If you wish to plough straight and deep, hitch your plough to a star.

THE OPENING OF THE PALACE OF PEACE.

By Jhr. A. P. C. Karnebeck, The Hague, Holland.

President of the Carnegie Foundation Committee; vice president of The Hague Peace Conference, 1899; member of the Second Chamber of the States-General.

In the course of this year the Palace, or, as Mr. Andrew Carnegie prefers to call it, the Temple of Peace at The Hague will be opened. But alas. Fierce war has lately been raging. Therefore the important question between peace and war naturally comes up for consideration.

The normal condition in the relations between civilized states is unquestionably that of peace. Not only because Christianity preaches love and benevolence among the brotherhood of mankind, and humanity abhors the cruel slaughter and suffering produced by war, but also because the economical interests of the different nations are nowadays so interwoven that disturbance of the peace, or even the near danger of it, damages the sources of welfare that feed the development of material prosperity in a much wider circle than the parties engaged in the strife. War is a calamity that affects seriously even the outsiders who stand aloof. Warfare nowadays requires such tremendous sacrifices of life and money that even the victor smarts a long time under these losses. The state of peace is the natural rule; the state of war is the unnatural exception.

Is that to say, that no war can be justly fought; that States, like individuals, may not defend themselves if attacked; that an oppressed nation may not fight for its freedom; that arms may not be taken up to prevent or redress flagrant injustice done to others?

Evidently the beautiful doctrine of peace in leading to such conclusions would go too far. But well does it condemn all wars caused by love of power and conquest (imperialism), by craving for trade advantages (mercantilism), by excitement of morbid national sensibility and prejudice (jingoism).

If these reflections hold true, war may be a reaction against injustice, but will be often a crime and mostly a folly, and at the root of it will always be some failure in what is right.

The abolition of war is in principle a question of international ethics. If the different States and Governments always were inclined to observe toward each other the rules of justice, no cause for

war would arise. But it is also in certain respects a technical question. Even between those who are willing to do right when conflicts surge up from different interests it is often not clear what is the right in the dispute. There seems to be no better, no other method to make this out, than to call in the decision of the umpire, of the judge, and nobly to abide by it, even if honest doubt about its correctness should be entertainable.

In both respects the so-called peace conferences have done splendid work. Supported by the swelling wave of the humanitarian conviction that war is an abnormality which may be overruled by moral reflection and the practice of justice, the high-minded representatives of, we may say, all civilized States on one hand made an eloquent appeal to the ethical feelings for peace in international relations and peaceful settlement of international conflicts, and on the other hand established a court of arbitration, governed by rules drawn up by the ablest specialists, and so well balanced in its composition and in its working that apprehension of partial verdicts would be unreasonable. In fact, this court is a jury chosen by the parties themselves. Moreover, its carefully conceived rules of arbitral procedure may serve and have served for international arbitration in other form, if so desired. Here, then, has been rooted a germ of mundane humanism capable by further culture to produce that community of States and nations, toward which noble minds amongst statesmen and philosophers have felt attracted without ever before coming so near.

No wonder that Mr. Andrew Carnegie was tempted generously to devote out of his ample means a considerable sum in order to provide with a suitable mansion this institution created by the first Peace Conference, in honor of which it is called the Peace Palace. By its ethical signification it is indeed a Temple of Peace, of which the high tower beckons to all believers in the gradual advancement of humanity toward the ideal of peace. As the seat of the International Court of Arbitration it is a Palace of Justice, offering the means of preventing war by the practice of adjudication. Well may Mr. Carnegie have found here a fruitful investment for the profit of his most cherished ideas.

If, nevertheless, wars have broken out, shall we then abstain from opening this temple, this palace of peace? We might as well close the houses of worship because virtue has not yet succeeded in abolishing sin. We might as well shut the courts of justice because crime and violence are still rampant. No, it is under all circumstances good that the peaceful work of the Peace Conference be vested in a monumental building, attracting attention, drawing visitors and pilgrims, inviting Governments to submit their differences to its Court of Arbitration and students of international law to

congregate in its special library. Here, though war were actually waged, the better thought of peace and arbitral settlement of quarrels should find a worthy refuge and maintain hope for the future.

CENTENARY OF THE TREATY OF GHENT.

An International Celebration of One Hundred Years of Peace between English-Speaking Peoples.

[*From The Outlook.*]

The Treaty of Ghent, which officially closed the War of 1812 between the United States and England, was signed on Christmas Eve, 1814, in the stately refectory of the monastery of the Carthusian Brothers, in the famous city of Ghent, Belgium.

The American commissioners appointed to negotiate the treaty were John Quincy Adams, American Minister to Russia; Jonathan Russell, Minister to Sweden; James A. Bayard, Senator; Henry Clay, Member of Congress; and Albert Gallatin, Financial Secretary. The British delegates were Admiral Lord Gambier, Henry Goulburn, and William Adams, and they had with them as secretary Anthony John Baker. They arrived in Ghent on August 6, 1814, and lived at the old Carthusian Convent. Five months later the treaty was signed, rather under pressure of public opinion and external events than because the plenipotentiaries had come to any real agreement on the points in dispute. The conclusion of the treaty was celebrated by a gala performance at the theater, and on the evening of January 5 the municipality of Ghent gave a splendid banquet to the commissioners in what is now the Hall of Archives in the Hotel de Ville. The occasion was a brilliant one. In concluding his toast to the city of Ghent at this banquet, John Quincy Adams used these words: "May the gates of the Temple of Janus, closed here, never be opened during the century." It is proposed by the burgomaster of Ghent, the Hon. Emile Braun, and his associates of the municipality to restore to its original appearance the fine-vaulted chamber where this banquet took place, hanging again on its walls the pictures which adorned them a century ago, and to give another banquet on the 5th of January, 1915, to which shall be invited distinguished representatives of all the countries concerned. It is proposed also to restore the room in the Carthusian Monastery where the treaty was signed, and to dedicate it as a place of historical pilgrimage.

The idea of an international celebration of the signing of the Treaty of Ghent was suggested by Mr. John A. Stewart, of New York. At about the same time a similar suggestion was made in Buffalo, and a little later one of the commissioners of the Niagara reservation proposed at a regular meeting of the commissioners that the cen-

tenary be signalized by the erection across the Niagara River of a free Memorial Bridge to take the place of the present steel arch toll bridge, and thus to open unobstructed communication between Canada and the United States at the locality most closely identified with the hostilities of the War of 1812. This proposal was indorsed at the Lake Mohonk arbitration conference in the spring of 1910, in an address by the Hon. Mackenzie King, the Canadian Minister of Labor, who had already at the Harvard Commencement in 1909 made what is supposed to be the first public utterance in favor of celebrating the anniversary. At the same place a year later Mr. Andrew B. Humphrey, of New York, delivered an interesting address reviewing the preliminary work of organization which had been achieved.

The formal beginning of the movement was a meeting called by Mr. John A. Stewart at the Republican Club in New York in June, 1910, at which a preliminary organization was created. A special committee of 15 visited the Hon. William H. Taft, President of the United States, at Beverly, Mass., on July 15, 1910. The movement was fully discussed, and it received the hearty approval of the President.

Nearly half a hundred suggestions as to various forms of celebrating the anniversary have been made. Those which are at the moment under special consideration are mentioned below. Most of them seem likely to be adopted.

First. A general inauguration of the celebration on Christmas Eve, 1914, by religious services in cathedrals, churches, synagogues and chapels, in schools and universities, and wherever Anglo-Saxon people are gathered together. Appropriate music, historical information, and other material will, it is hoped, be widely distributed, so that this introductory observance may be participated in wherever English is spoken.

Second. A formal banquet in the great hall of the Hotel de Ville, in the city of Ghent, to be given by the burgomaster and the municipality, on January 5, 1915, in memory of the banquet given to the British and American commissioners on the corresponding date in 1815 to celebrate the signing of the treaty. The restoration of this hall to its condition a century ago is an important feature of this suggestion.

Third. The erection of a Memorial Free Bridge across the Niagara River, connecting the State reservation on the American side with the reservation on the Canadian side—the bridge to be a perpetual symbol of the peaceful relations between the Dominion and this country and of their community of commercial and social interests.

Fourth. The acquiring and endowment of Sulgrave Manor, in Northamptonshire, England, the ancestral home of George Washington, and its use as an international gathering place, as well as a

repository of historical memoranda concerning the relations of the two countries. This manor house bears over its main entrance the armorial bearings of the Washington family, which became the basis of the American flag.

Fifth. The erection in Washington by the women of America of a statue of Queen Victoria, who was the first imperial ruler of Great Britain, and during her 60 years' reign exemplified most conspicuously the lofty ideals, the homely virtues, the high character, and the devotion to public service of the women of the Anglo-Saxon race.

Sixth. The study in the schools of both countries and their colonies during the autumn of 1914 of the History of the Hundred Years of Peace, to the end that the children may learn how the various international difficulties of the century, many of them acute and dangerous, have been adjusted either by diplomatic conference or by arbitration. Special histories of the period are likely to be prepared under the direction of the committees, and if the plan is carried out the school children of the two great nations will have the opportunity of studying for the first time a history which contains no record of war.

A bust of George Washington in Westminster Abbey, identical monuments, in London and Washington, commemorating the hundred years of peace; peace monuments along the United States Canadian border and in Ottawa, Baltimore, Toronto, Chicago, Savannah, San Francisco, and such other locations as may be selected and approved by those interested; statues of Chatham and Burke in appropriate places; a museum of industrial arts in New York City to be dedicated to the uses of the people for the promotion of the peaceful arts and sciences and friendly international intercourse; international congresses opening in New York and ending at the Panama Exposition at San Francisco, consecrating the peace sentiment of the world upon the specific accomplishments desired through the Third Hague Peace Conference; memorial postage stamps, coinage, and medals; and a memorial arch to span the international New York to Montreal highway at the American-Canadian frontier, are some of the other suggestions which have been offered.

The American committee thus far created consists of the following:

Honorary chairman, Theodore Roosevelt; chairman, Andrew Carnegie; honorary vice chairmen, Elihu Root, Levi P. Morton, Adlai E. Stevenson, William Jennings Bryan, Alton B. Parker, Joseph H. Choate; vice chairmen, Edwin Ginn, Albert K. Smiley, Oscar S. Straus; depository, J. P. Morgan & Co.; honorary treasurer, Lyman J. Gage; treasurer, James L. Wandling; chairman auditing committee, Job E. Hedges; honorary secretary, Harry P. Judson; secretary, Andrew B. Humphrey; executive committee, Charles W. Fairbanks, honorary chairman; John A. Stewart, chairman; Theodore E. Burton, honorary vice chairman; Theodore Marburg, vice chairman; J. Horace McFarland, honorary secretary; William H. Short, secretary; chairman committee on legislation, Hon. Alton B. Parker; chairman committee on historic review of the century of peace, Dr. Nicholas Murray Butler; chairman committee on international conference and organization, William B. Howland; chairman committee of

publicity, Dr. Albert Shaw; chairman committee on memorials, Andrew B. Humphrey; chairman committee on celebration in the city of New York, Dr. George F. Kunz.

The British committee has been fully constituted, and it is within the bounds of truth to say that a more representative and influential voluntary organization has never been created in England. The officers elected are:

President, the Hon. Earl Grey, G. C. B.; deputy president, the Earl of Plymouth; vice presidents, the Prime Minister, the Rt. Hon. H. H. Asquith, the Rt. Hon. Sir Edward Grey, the Rt. Hon. Lewis Harcourt, the Rt. Hon. D. Lloyd George, the Rt. Hon. the Earl of Aberdeen, K. T., the Rt. Hon. A. J. Balfour, M. P., the Rt. Hon. A. Bonar Law, M. P., the Archbishop of Canterbury, the Bishop of London, Cardinal Bourne, Archbishop of Westminster, the Rev. Dr. Clifford, and many others of high distinction; chairman executive committee, Lord Shaw of Dunfermline; honorable treasurers, Lord Revelstoke, Lord Rothschild; honorable secretary, Sir A. Conan Doyle; honorable solicitors, Messrs. Coward & Hawksley, Sons & Chance; honorable auditors, Messrs. Delcitte, Plender, Griffiths & Co.; secretary, H. S. Perris, M. A.; chairman memorials committee, Earl of Plymouth; chairman finance committee, Lord Cowdray; chairman dominions and over-seas committee, Mr. Harry E. Brittain; chairman publicity committee, Mr. Sydney Brooks.

The plans for organization of the Canadian committee were begun during the administration of Sir Wilfrid Laurier, but the very vigorous campaign which preceded the change of government interrupted their progress. Soon after assuming the responsibilities of government the new Prime Minister, the Rt. Hon. R. L. Borden, P. C., appointed the Hon. G. H. Perley, a member of his cabinet, to take the matter in hand, and on the 4th of June, 1912, a largely attended meeting was held at the House of Commons in Ottawa, in response to an invitation sent out by Mr. George A. Cox, Senator R. Dandurant, L. A. Jette, A. Lacoste, William Mackenzie, W. R. Meredith, William Mulock, T. G. Shaughnessy, and B. E. Walker. Replies of a sympathetic nature were received from nearly 300 persons, including the Prime Minister, the Rt. Hon. R. L. Borden, the former Prime Minister, Sir Wilfrid Laurier, Sir William Van Horne, and Sir William Mackenzie. Sir Edmund Walker was unanimously elected president of the association and C. F. Hamilton secretary. A general committee was then created containing the names of 264 representative citizens from various parts of the Dominion.

TO THE TEACHERS OF THE UNITED STATES.

By Baroness Bertha von Suttner, of Vienna, Austria.

The peace movement has taken on three aspects—as a religion, as a science, and as a warfare. As a religion it appeals to our highest duties toward God and man, and we have to preach it. As a science its arguments are based on natural history, on statistics, on political

economy, on sociology, and we have to teach it. As a warfare it rouses our courage for victory, it deepens our contempt for the follies and the cruelties of the other side, and we have to fight for it.

The enemy—I mean the spirit and the institutions of war—is a very powerful one. The whole military system is based on secular traditions, on deep-rooted prejudices, on violent passions, and on far-reaching vested interests. To conquer this foe with the weapons of reason, of morals, of logic, inspired by a passionate love of humanity—this will be the most glorious battle record which the twentieth century has in store for your youth of America. I have the conviction that it is your country, which is young itself and has all the enthusiasm and daring of youth, which is untrammeled by ancient traditions—I have the conviction that your country is destined to take the lead in this campaign for world-wide peace. In Europe, where the military spirit is supported by thrones, schools, and even churches, the peace workers fight under difficult conditions, and we confide in the help and initiative of the New World. There, your very flag with its 48 stars is a symbol of peace, for it shows the possibility of the union of autonomic States, and therefore the possibility of what is the peace movement's ultimate aim—the federation of the world. To you, as a Nation, you know of all others the price of liberty and independence; peace means the independence of humanity. The slaves have been set free; but as long as the institution of war persists, as long as every man can be compelled to kill his fellow men, we are—all of us—in slavery.

The future will set you many high tasks and many important problems, but certainly the highest and most important of all is the peace question, for it involves almost every other, peace being the chief condition of human civilization and welfare. This is not merely the opinion of the members of organized peace societies. I find it corroborated by the utterances of hundreds of your most prominent men. I will only quote two. Commissioner P. P. Claxton said in a circular to the schools:

> Among the many movements of modern times for the advancement of civilization and the relief of humanity from unnecessary burdens of expenditure and paralyzing fear, none is more significant than that for arbitration and world-wide peace.

And President Taft, whose initiative in proposing the unrestricted treaties with England and France constitutes a title to everlasting glory, said:

> The development of the doctrine of international arbitration, considered from the standpoint of its ultimate benefits to the human race, is the most vital movement of modern times.

Yes, the most vital. Let me illustrate this with a parable:

Suppose that we are on board a splendid ship bound to the land of promise. The journey is a long one. Much work is done by the officers and the crew, each at his post; and among the passengers

many amusements are indulged in. But the vessel has a leak. If this is not stopped, the vessel must sink. To mend the matter would not be difficult at all—but people simply do not see the leak. Is it not natural that the few who do see it unceasingly clamor for the remedy, and is it not the height of absurdity that the others refuse to listen and eagerly continue to steer the ship and to rub and polish all its parts, instead of—first of all—saving it from destruction?

Our civilization, my dear fellow passengers, is such a ship. Its machinery is ever more efficient; its sails, swelled by every higher aspiration, flutter triumphantly in the wind; but it has a leak—the old barbaric system of force—and there the destroying waters pour in.

But here the simile ends. The ship must not sink into the deep. There are many now, and their number increases daily, who see the leak, who know the remedy, and who will apply it. Civilization will not perish. Its safety and development is the task of the coming generation, and the development of that generation lies in the hands of teachers.

ONE HUNDRED YEARS OF PEACE.

From an address of Hon. William D. B. Ainey, Member of Congress from Pennsylvania.

A hundred years of peace between elbow-touching nations, wherein the thoughts and purposes of each have run in parallel lines in unbroken course, notes a great era of the world.

The signing of the treaty of Ghent marks a new source from which spring the fountains of English-speaking history. Since that day the two mighty rivers of Anglo-Saxon life and influence have flowed steadily on, side by side, never overflowing their banks, but in their onward course bound in the very nature of things to mingle their waters in the great ocean of a common destiny and accomplishment. It would be interesting to follow them in their history under this figure of speech from small beginnings to the mighty present, and to peer, as far as the mere human may, into the region of the coming days.

The similarity is so apparent that it has been often remarked, common in language, literature, history, and traditions, with similar religious and ethical conceptions, possessed of the same ideas as to the fundamentals in government, they have both sought, through all these means of expression, to obtain and give that liberty which means the exaltation of the individual life to a place where it may fulfill the duty of its created purpose.

The common goal is quite apparent, the waters may overflow the banks, and, God forbid it, wars may come to hinder and delay; but as surely as the day is day, as right is right, and rivers flow to ocean,

the Anglo-Saxon problem will ultimately find solution in the broadest and deepest unity of purpose.

Among the world's great thinkers of other races the peculiar aptitude of the Anglo-Saxon to grasp the thought of his own and others' rights in his quest for liberty has been pointed out. He has been intensely, but not selfishly, individualistic in his views. To him personal liberty has meant individual liberty, if one may here differentiate in terms. Not merely the liberty to throw off restraint, but liberty to do and be and think and to acquire; liberty to express himself in life and influence, to reach the topmost rung, to climb the highest peak, to fulfill within himself the high possibility of his created being.

One hundred years of peace have not been years of sluggish sleep. Great problems have been met and solved, and these in turn have made new problems, which now meet the English-speaking peoples. During this lapse of time the Anglo-Saxon has contributed largely to modern civilization, and in turn received of its benefits. He has demanded for himself liberty, and he has attained it and has increased in stature by the attainment. With liberty came enlightenment; this gave him a vision of opportunity, and he has seized it.

The rank and file have answered the Anglo-Saxon cry to step up higher. Thus far their destiny is accomplished. It has brought an influx of great numbers, the inevitable result of our conception of personal liberty, into the activity incident to national governments, and so influencing the international relations. And now they are turning the wheels of our body politic. National consensus of opinion, always potent, rests not now with the few but with the many.

The spirit of unrest, concerning which so much has been said, comes as a necessary sequence in the development of the liberty of thought among the English peoples, and it has caused some to question whether after all we have not made a bad solution. I have no fears, nor would I retrograde in Anglo-Saxon purpose, but meet the issue squarely.

The problem is profoundly international; it is intensely national; it is preeminently individual; involved in it are the principles which sustain world peace.

Referring again to the accepted and well-recognized similarity between British and American conditions and thought, as elements contributing materially to a continuance of English peace, it may well be said that men who think alike have little chance to dispute. So strong is this that were the boundary lines of government suddenly removed with their attendant prejudices, the English-speaking peoples would coalesce, as by the law of attraction, to a common thought and interest.

The point, then, is for us to know that we think alike. This brings international confidence. If we do not know that our neighbor

across the line is thinking similar thoughts, having similar hopes, actuated by similar ambitions, we have no common interest in each other. But when we find that he grows roses and we like roses, the door opens and we may go back and forth in newborn comity.

History, travel, commerce, intercommunication, arbitral treaties, and arbitrations lead nations to know each other better and bring about a common understanding—an international public opinion.

Nations express themselves through their peoples; and public opinion, considered in the light of the greater number of those whose thought create it, is more powerful than ever before. It is the power which hereafter can influence war or sustain peace between the English-speaking peoples. It must be addressed; it must be considered; it must be reckoned with.

Mankind yields to two great influences—the intellectual, which affects his judgment, and the moral, affecting his sentiment. The world has ever strongly emphasized the first and too oft minimized the second as being effeminate and intangible.

It has been the intangible, if you please, sympathy, love, honor, patriotic devotion, high unselfishness, which has left its impress in every step of progress in individual or world development. On no other basis can the brotherhood of man be established and maintained; on no other consideration can world peace and home peace be assured. To its gentle attractions the multitudes have ever yielded a ready response; but if it be not offered to the people, what then? There soon is found a lodgment for the world-destroying counterfeit—war-producing hate.

To bring about an international understanding, using the apt term formulated by Dr. Nicholas Murray Butler, so freighted in meaning as to be quickly seized by the English world, we need an "international mind."

We may not stop here, else we fail in our philosophy to realize how much the great world hangs its activities upon the broad sympathies of mankind; the potency of the emotional in man; its quick response to words of love or hate, to kiss or blow; the ready yielding of both men and nations to the common influence of a kindred feeling.

THE COSMOPOLITAN MOVEMENT.

By Louis P. Lochner,

General secretary of the Association of Cosmopolitan Clubs.

Since 1903 there have sprung up in numerous colleges, universities, and technical schools of this country, international or cosmopolitan clubs of students, whose membership comprises principally the foreign-born students at these institutions—young men coming from the countries of Europe, the two Americas, Africa, and the

Orient. The purpose of these clubs is to bring together in one brotherhood men from different countries, to learn the customs, viewpoints, and characteristics of other nationalities, to remove racial prejudices, and to establish international friendships.

The first organization was called into life just 10 years ago, when 16 foreign and 2 native students formed the International Club of the University of Wisconsin. The first president of this society was an Armenian, the vice president a Norwegian, the secretary a Japanese, and the treasurer a United States member. A year later a Cosmopolitan Club was founded at Cornell University, the roster of officers comprising a New Zealander, a Chinese, a German, and a United States member. Almost spontaneously, within the next two years 6 other institutions were enriched by the birth of similar clubs.

The necessity of a closer association of these scattered units became apparent at once. When, therefore, delegates of the existing clubs were invited to meet at Madison, Wis., in December, 1907, to form an Association of Cosmopolitan Clubs, every one of the 8 societies was represented. From that time on the movement spread with remarkable rapidity. A network of 30 vigorous chapters extends from Harvard and Yale in the East to Stanford and Washington in the far West. A monthly magazine, *The Cosmopolitan Student*, keeps the members in touch with each other and with the work confronting the federated body. Annual conventions afford picked representatives from the local units an opportunity to deliberate upon problems common to all the clubs, and to listen to inspiring addresses by speakers of international fame.

The value of organized effort is seen from the facts that the association has prevailed upon a score of universities to appoint special faculty advisers for foreign students; that it has received the virtual promise of the United States Commissioner of Education to issue a bulletin of information regarding American universities for the guidance of foreigners contemplating matriculation in our higher institutions of learning; that it has effected an exchange of membership privileges between the component chapters by means of which the individual member migrating to another university is at once made to feel at home; and that it is now attempting to persuade the faculties at large universities to offer special courses in spoken English to foreigners. It is significant that these measures owe their origin for the most part to the United States members. On the other hand the foreign students have been largely responsible for the raising of $2,500 to help relieve the Chinese famine sufferers in 1910, for the numerous appreciative articles that have appeared in foreign journals about American life and institutions, for the project now under consideration of holding a world's students' congress on the Pacific coast in 1915, and for the splendid missionary work of acquainting their

fellow students and the college communities in which they live with foreign civilizations through the medium of periodic "national nights," in the course of which the representatives of one nation describe the customs and institutions of their mother country, play the music of their native composers and on their native instruments, recite and interpret masterpieces of their literature, exhibit their national dances, serve their characteristic dishes—in short, transmit the spirit of their country to the audience.

Alumni of our clubs, among them especially Dr. George W. Nasmyth, of Cornell University, have planted the germs of cosmopolitanism in the midst of the German universities, and have been instrumental in founding *Internationale Studentenvereine* successively at Berlin, Leipzig, Munich, Goettingen, and Heidelberg, and in leaguing the German branches into a Verband similar to the North American association. The officers of this Verband are in cordial relation with their confreres on this side of the Atlantic. A member of our association is also responsible for the organization of the Cosmopolitan Club of Roberts College, Constantinople.

In 1909, at the invitation of the central bureau of the *Fédération Internationale des Ètudiants "Corda Fratres,"* members of the Association of Cosmopolitan Clubs took part in the sixth international congress of that body at The Hague, Holland. They were so impressed with the similarity in aims and ideals between the Fédération Internationale and the Cosmopolitan Association that they strongly recommended the affiliation of these two large student bodies. The Fédération, it should be noted in passing, has for its principal purpose that of "favoring and protecting the idea of solidarity among students." Its chief centers are in Italy, to which it owes its existence, Hungary, Holland, Greece, Argentina, Uruguay, Chile, Tunis, and Malta.

Difference of opinion as to what form the affiliation of Corda Fratres and the Cosmopolitan Clubs should take led to the appointment of another delegation of our association to the seventh international congress, held at Rome in 1911. Here, finally, a working program for the biennium 1911–1913 was ratified which, it is hoped, will become permanent, by which the chapters of the Association of Cosmopolitan Clubs, the consulats of the Corda Fratres, the Vereine of the German Verband, the Unions des étudiants of France, the East and West Clubs of England, and similar bodies form a world confederation of students. An international central committee, composed of two members of each national group, has general charge of the work of propaganda and correspondence. Of this committee, Dr. George W. Nasmyth, of Cornell, is president for this biennium and the writer is secretary.

In recognition of the work of the Association of Cosmopolitan Clubs, it was voted to hold the eighth international congress on North

American soil, and the invitation of the Cornell Cosmopolitan Club to hold the official sessions in its magnificent club house at Ithaca, N. Y., was enthusiastically accepted.

The preparations for the congress are now well under way. Invitations to the students of the world have been sent for circulation to all the ministries of education, to the college papers of this and other countries, to all the student associations whose names could be learned by the congress committee headed by Carlos L. Locsin, of Cornell, a Filipino student of remarkable organizing powers, and to hundreds of individual students. An honorary committee headed by President Wilson, and comprising such names as that of United States Commissioner of Education Philander P. Claxton, Director General John Barrett, of the Pan American Union, Secretary Benjamin F. Trueblood, of the American Peace Society, Gov. Sulzer and Mayor Gaynor, of New York, Edwin Ginn, of Boston, Director Edwin D. Mead, of the World Peace Foundation, Editor Hamilton Holt, of The Independent, Dr. Andrew White, and the presidents of practically all colleges and universities at which there are Cosmopolitan Clubs, is giving its moral support to the congress. The division for intercourse and education of the Carnegie Foundation has shown its interest by granting a considerable subvention to help finance the congress, while the World Peace Foundation of Boston has made it possible for President Nasmyth of the international central committee to spend most of his term of office in Europe, where he is rousing the student bodies of the Old World to the importance of the coming international meeting.

The object of the congress, as defined in the "Call" just issued—

> will be to bring together the representatives from all the students of the world, in order that the spirit of international brotherhood and humanity may be fostered among them as a result of the deliberations of the congress, and in order that the students of the world may be united into an all-embracing world organization.

While the official sessions will be held at Ithaca, it is planned to have the foreign delegates land at Boston on or before August 29, and from that time on until September 13 to provide for an itinerary comprising Boston, Cambridge, New York, Albany, Niagara Falls, Ithaca, Philadelphia, and Washington. Among the special entertainment features of the congress the following are announced: A banquet by the New York Peace Society, a reception by the governor of New York at Albany, a social function of some sort in the Pan American Building at Washington, and a reception by the President of the United States.

In conclusion, just a word as to the importance of the cosmopolitan movement for the future of amicable international relations. We occupy a unique position. We are not a peace society, technically so called. We indorse no particular mode of settlement of international disputes. Nevertheless, our movement is pregnant with

tremendous possibilities for peace, for we bring together at the most formative period of their lives picked young men from some 50 different countries, show them that the other fellow is animated by the same high ideals for which they take credit, acquaint them with other peoples and civilizations, and teach them that humanity—all-embracing, all-including, linked into the idea of brotherly love, of sympathetic understanding, of good will toward all mankind—is a bond of union transcending national, racial, or color lines of demarcation.

I say advisedly that our members are picked young men. Many of them are Government students. Others are the sons of the most prominent families in their country. Still others are that sturdy type that earn their way through college in the face of the greatest obstacles. To the young men of to-day belong the destinies of to-morrow. Our members are foreordained to become leaders of thought and action upon their return to their native lands, not only because of their personal ability, not only because of their superior collegiate training, but also because of the broadening influence which their association with the Cosmopolitan Club has exercised upon them. Witness the fact that one of our Chinese members is now press correspondent at Shanghai for eight leading American newspapers and for the Reuter international news agency; that another is assistant director of the gigantic railway system of China; a third, professor of political science in a Chinese provincial college. Witness the fact that a Japanese cosmopolitan is preceptor of one of the large dormitories of Waseda University, Tokyo, and exercises a potent and direct influence upon hundreds of students under his charge; that an Argentine alumnus is one of the highest officials in the Bureau of Education of his country; that the first president of one of our chapters has recently become president of a missionary college in Turkey; that the Young India party is largely recruited from the Hindu students in our American universities. Who can foresee the ultimate influence of the movement?

RESOLUTIONS ON PEACE PASSED BY NATIONAL EDUCATION ASSOCIATION, 1912.

The National Education Association again records its interest in the cause of world peace, which it regards as one of the great educational movements of the age. The association especially calls attention to the helpful material prepared by the American School Peace League, which is admirably adapted to the school program. The association commends most highly the active interest taken by United States Commissioner Philander P. Claxton in disseminating information on the subject, especially in his publication of the Peace Day bulletin.

The National Education Association regards the present attempt to establish compulsory military training in the schools of the country not designed primarily for military training as reactionary and inconsistent with American ideals and standards.

A NOTABLE EMPIRE DAY CIRCULAR.

The circular which Mr. R. Blair, the education officer of the London County Council, issued to teachers last May, is worthy of consideration by educators throughout the world. After describing the kind of teaching that should be given and the true ideal about the Empire, the circular contained the following sentences:

"A widespread Empire united by love and respect and strengthened in its unity by possession of a common language should be a vital factor in the maintenance of peace throughout the world."

"It is perhaps well to remind them [the children] and ourselves occasionally of a great soldier's saying, that for every good quality evoked by war there are fifty bad ones to set against it. Children should be made to feel that this great Empire is a union for peace and defense and not for aggression and aggrandisement."

"It is the quality rather than the quantity of British rule that ought to be emphasized. On Empire Day the children should indeed be taught 'to think imperially'; but to think imperially should be to think not materially, but spiritually; not arrogantly, but magnanimously; not proudly, as in contemplation of a great possession, but humbly, as in recognition of a great duty."

WARS AND THEIR COST.[1]

Dates.	Countries engaged.	Cost.	Loss of life.	Armies in the field.
1793–1815	England and France	$6,250,000,000	1,900,000	3,000,000
1812–1815	France and Russia	450,625,000	.....	1,500,000
1828	Russia and Turkey	100,000,000	120,000	.....
1830–1840	Spain and Portugal (civil war)	250,000,000	160,000	300,000
1830–1847	France and Algeria	190,000,000	110,000	150,000
1848	Revolts in Europe	50,000,000	60,000	.....
1845	United States and Mexico	.....	10,000	90,100
1854–1856	England	371,000,000	609,797	1,460,500
	France	332,000,000		
	Sardinia and Turkey	128,000,000		
	Austria	68,600,000		
	Russia	800,000,000		
1859	France	75,000,000	24,000	128,000
	Austria	127,000,000	.....	200,000
	Italy	51,000,000	.....	50,000
1861–1865	The United States (Civil War)	5,000,000,000	294,400	2,041,600
			200,000	750,000
1864	Denmark, Prussia, and Austria	36,000,000	.....	.....
1866	Prussia and Austria	330,000,000	57,000	639,000
1864–1870	Brazil, Argentina, and Paraguay	240,000,000	330,000	.....
1865–66	France and Mexico	65,000,000	65,000	100,000
1870–71	France	1,580,000,000	311,000	1,713,000
	Germany	954,400,000		.....
1876–77	Russia	806,547,489	180,000	1,500,000
	Turkey	403,273,745		.....
1898	Spain and the United States	1,165,000,000	20,000	300,000
1900–1901	Transvaal Republic and England	1,000,100,000	91,000	400,000
1904–5	Russia and Japan	2,500,000,000	555,900	2,500,000

[1] From the report of the Massachusetts commission on the cost of living, 1910.

Expense of wars, 1793–1860	$9,243,225,000
Expense of wars, 1861–1910	14,080,321,240
Total	23,323,546,240
Loss of life, military service	5,098,097
Armies in the field	16,822,200

THE RUSH-BAGOT AGREEMENT OF 1817.

"The naval force to be maintained upon the American Lakes by His Majesty and the Government of the United States shall henceforth be confined to the following vessels on each side, that is—

"On Lake Ontario to one vessel, not exceeding 100 tons burden, and armed with one 18-lb. cannon;

"On the upper lakes to 2 vessels, not exceeding like burden, each armed with like force;

"On the waters of Lake Champlain, to one vessel, not exceeding like burden, and armed with like force;

"All other armed vessels on those lakes shall be forthwith dismantled, and no other vessels of war shall be there built or armed.

"If either party should be hereafter desirous of annulling this stipulation, and should give notice to that effect to the other party, it shall cease to be binding after the expiration of six months from the date of such notice.

"The naval force so to be limited shall be restricted to such service as will in no respect interfere with the proper duties of the armed vessels of the other party."

INTERNATIONAL ARBITRATION TREATIES.

The following is a summary by years of international arbitration treaties:

1899	3	1909	32
1901	1	1910	18
1902	12	1911	10
1903	6	1912	1
1904	26	Gross total	163
1905	23	Deducting duplicated supersessions	9
1906	4	Net total	154
1907	5		
1908	22		

The following is a summary by countries of international arbitration treaties:

Argentina, 14; Austria-Hungary, 5; Belgium, 11; Bolivia, 6; Brazil, 30; Chile, 3; China, 2; Colombia, 7; Costa Rica, 4; Cuba, 2; Denmark, 12; Ecuador, 4; France, 13; Germany, 2; Greece, 5; Great Britain, 15; Guatemala, 1; Haiti, 2; Honduras, 3; Italy, 18; Japan, 1; Mexico, 5; Netherlands, 6; Nicaragua, 4; Norway, 12; Panama, 2; Paraguay, 6; Persia, 1; Peru, 6; Portugal, 14; Roumania, 1; Russia, 7; Salvador, 3; San Domingo, 2; Spain, 24; Sweden, 12; Switzerland, 10; United States, 26; Uruguay, 4; Venezuela, 3.

A complete list of treaties may be found in a "Revised List of Arbitration Treaties," compiled by Denys P. Myers, World Peace Foundation, 29A Beacon Street, Boston, Mass.

THE HAGUE CONFERENCES.

THE FIRST CONFERENCE, 1899.

[Sir Thomas Barclay, in The Encyclopædia Britannica, 11th edition, Vol. XXI, article on "Peace Conferences."]

The First Hague Conference was organized at the instance of the Emperor Nicholas II, of Russia. The chief object of the first conference, as set out in the note of Count Mouraviev, the Russian minister of foreign affairs (January 11, 1899), was to arrive at an "understanding not to increase for a fixed period the present effectives of the armed military and naval forces, and at the same time not to increase the budgets pertaining thereto; and a preliminary examination of the means by which even a reduction might be effected in future in the forces and budgets above mentioned." The conference, which was attended by representatives of 26 States, sat from the 18th of May to the 29th of July, 1899.

When the subject of excessive armaments came up for discussion, the objections of the German military delegate led to its abandonment. Other very important matters, however, were dealt with, and three momentous conventions were adopted, viz:

I. A convention for the pacific settlement of international disputes.

II. A convention relating to the laws and customs of war by land.

III. A convention for the adaptation to maritime warfare of the principles of the Geneva Convention of the 22d of August, 1864.

Three declarations on the following matters were also adopted:

(*a*) Prohibition of the launching of projectiles and explosives from balloons or by other similar new methods.

(*b*) Prohibition of the use of projectiles the only object of which is the diffusion of asphyxiating or deleterious gases.

(*c*) Prohibition of the use of bullets with a hard envelope, of which the envelope does not entirely cover the core, or is pierced with incisions.

The conference furthermore passed the following resolutions:

The conference is of opinion that the restriction of military budgets, which are at present a heavy burden on the world, is extremely desirable for the increase of the material and moral welfare of mankind.

The conference, taking into consideration the preliminary steps taken by the Swiss Federal Government for the revision of the Geneva Convention, expresses the wish

that steps may be shortly taken for the assembling of a special conference, having for its object the revision of that convention.

The following *voeux* were adopted, but not unanimously:

1. The conference expresses the wish that the question of the rights and duties of neutrals may be inserted in the program of a conference in the near future.

2. The conference expresses the wish that the questions with regard to rifles and naval guns, as considered by it, may be studied by the governments with the object of coming to an agreement respecting the employment of new types and calibers.

3. The conference expresses the wish that the governments, taking into consideration the proposals made at the conference, may examine the possibility of an agreement as to the limitation of armed forces by land and sea, and of war budgets.

4. The conference expresses the wish that the proposals which contemplate the declaration of the inviolability of private property in naval warfare may be referred to a subsequent conference for consideration.

5. The conference expresses the wish that the proposal to settle the question of the bombardment of ports, towns, and villages by naval forces may be referred to a subsequent conference for consideration.

THE SECOND CONFERENCE, 1907.[1]

The conference of 1907, which was also called by the Czar of Russia, and which was attended by representatives of 44 States, sat from the 15th of June to the 18th of October. Again, in spite of the resolution and *voeux* on armaments handed down from the conference of 1899, this subject was waived, but still more important conventions than in 1899 were adopted on other matters. These were as follows:

I. Convention for the pacific settlement of international disputes.

II. Convention respecting the limitation of the employment of force for the recovery of contract debts.

III. Convention relative to the commencement of hostilities.

IV. Conventions concerning the laws and customs of war on land.

V. Convention respecting the rights and duties of neutral powers and persons in war on land.

VI. Convention relative to the status of enemy merchant ships at the outbreak of hostilities.

VII. Convention relative to the conversion of merchant ships into warships.

VIII. Convention relative to the laying of automatic submarine contact mines.

IX. Convention respecting bombardment by naval forces in time of war.

X. Conventions for the adaptation of the principles of the Geneva Convention to maritime war.

XI. Convention relative to certain restrictions on the exercise of the right of capture in maritime war.

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[1] From The Encyclopædia Britannica, eleventh edition, with exception of last paragraph.

XII. Convention relative to the establishment of an international prize court.

XIII. Convention respecting the rights and duties of neutral powers in maritime war.

XIV. Declaration prohibiting discharge of projectiles, etc., from balloons.

A draft convention relative to the creation of a judicial arbitration court was also drawn up in connection with the first of the four following *voeux:*

1. The conference calls the attention of the signatory powers to the advisability of adopting the annexed draft convention for the creation of a judicial arbitration court, and of bringing it into force as soon as an agreement has been reached respecting the selection of the judges and the constitution of the court.

2. The conference expresses the opinion that, in case of war, the responsible authorities, civil as well as military, should make it their special duty to insure and safeguard the maintenance of pacific relations, more especially of the commercial and industrial relations between the inhabitants of the belligerent States and neutral countries.

3. The conference expresses the opinion that the powers should regulate, by special treaties, the position, as regards military charges, of foreigners residing within their territories.

4. The conference expresses the opinion that the preparation of regulations relative to the laws and customs of naval war should figure in the program of the next conference, and that in any case the powers may apply, as far as possible, to war by sea the principles of the convention relative to the laws and customs of war on land.

Finally, the conference recommended to the powers the assembly of a third peace conference, and it called their attention to the necessity of preparing the program of this third conference a sufficient time in advance to insure its deliberations being conducted with the necessary authority and expedition.

In order to attain this object the conference considered that it "would be very desirable that, some two years before the probable date of the meeting, a preparatory committee should be charged by the governments with the task of collecting the various proposals to be submitted to the conference, of ascertaining what subjects are ripe for embodiment in an international regulation, and of preparing a program which the governments should decide upon in sufficient time to enable it to be carefully examined by the countries interested," and that this committee should further be intrusted with the task of proposing a system of organization and procedure for the conference itself.[1]

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[1] Of the 14 conventions agreed upon at the Second Hague Conference, the first—the Convention for the Pacific Settlement of International Disputes (which includes the questions of mediation, arbitration, commissions of inquiry, and establishment of The Hague Tribunal)—has been ratified by the following Powers up to date: Austria-Hungary, Belgium, Bolivia, China, Denmark, France, Germany, Guatemala, Haiti, Mexico, Netherlands, Nicaragua, Norway, Portugal, Russia, Salvador, Siam, Sweden, Switzerland, United States [the last two with reservations.—Compiled.]

THE THIRD CONFERENCE, 1914 OR 1915.

Preparatory Committees and Commissions.

Inter-Parliamentary Union.—The Inter-Parliamentary Council was requested by resolution of the seventeenth conference at Geneva (September, 1912), to institute a special commission intrusted with the coordination of the different wishes and drafts which in the name of the union should be submitted to the international preparatory committee, these wishes and drafts to be communicated to the different national commissions.

Address: Inter-Parliamentary Union, 251 Avenue du Longchamps, Brussels, Belgium.

Dutch Commission.—President—M. W. H. de Beaufort.

Members—Jonkheer J. A. Roëll; Jonkheer J. C. J. van Beer Toortugael; M. J. A. Loeff; M. T. M. C. Asser; Jonkheer W. J. M. van Eysinge; M. le Baron D. W. van Heecheran, 15 Jan van Nassaustraat, The Hague, secretary.

Swedish Commission.—The Swedish Government has appointed a commission consisting of Herr K. Hj. L. Hammarskjold, governor of Upsala Province; Herr J. Hellner, late of the Supreme Court; Herr Oscar Ewerlof, of the Foreign Office; and Herr E. Beckman, of the Lower House of Parliament.

France.—Bureau at the Ministry of Foreign Affairs specially charged with questions connected with The Hague Conference.

THE HAGUE TRIBUNAL.

ADMINISTRATIVE COUNCIL.

President.—The minister of foreign affairs of the Netherlands.

Members.—The diplomatic representatives of the signatory powers accredited to The Hague.

MEMBERS OF THE COURT.

The court consists of a panel of 130 eminent jurists appointed by 40 sovereign countries, each country appointing from one to four members. The judges in any given case are selected from this list.

The members from the United States are—

John W. Griggs, formerly Attorney General of the United States.

George Gray, United States Circuit Judge, formerly United States Senator.

Oscar S. Straus, formerly Secretary of Commerce and Labor, formerly Ambassador Extraordinary and Plenipotentiary at Constantinople.

The countries represented are—

1. Argentina.
2. Austria-Hungary.
3. Belgium.
4. Bolivia.
5. Brazil.
6. Bulgaria.
7. Chile.
8. China.
9. Colombia.
10. Cuba.
11. Denmark.
12. Dominican Republic.
13. Ecuador.
14. France.
15. Germany.
16. Great Britain.
17. Greece.
18. Guatemala.
19. Haiti.
20. Holland.
21. Italy.
22. Japan.
23. Luxemburg.
24. Mexico.
25. Nicaragua.
26. Norway.
27. Panama.
28. Peru.
29. Persia.
30. Portugal.
31. Roumania.
32. Russia.
33. Salvador.
34. Servia.
35. Spain.
36. Sweden.
37. Switzerland.
38. Turkey.
39. United States.
40. Uruguay.
41. Venezuela.

CASES TRIED BY THE HAGUE TRIBUNAL.

(From its establishment by First Hague Conference, 1899.)

1. *United States of America* v. *Mexico.*
   Referred by treaty concluded at Washington, May 22, 1902.
   Subject: The Pious Funds of the Californias.
   Decision of court given October 14, 1902.
2. *Great Britain, Germany, and Italy* v. *Venezuela.*
   Referred by treaty concluded at Washington, May 7, 1903.
   Subject: The Affairs of Venezuela.
   Decision of court given February 22, 1904.
3. *Great Britain, France, and Germany* v. *Japan.*
   Referred by treaty concluded at Tokio, August 28, 1902.
   Question in dispute: The House Tax in Japan.
   Decision of court given May 22, 1905.
4. *Great Britain* v. *France.*
   Referred by arbitral compromis at London, October 13, 1904.
   Question in dispute: The "Boutres" (native craft) of Muscat.
   Decision of court given August 8, 1905.
5. *France* v. *Germany.*
   Referred by protocol signed at Berlin, August 10, 1908.
   Question in dispute: The Deserters at Casa Blanca.
   Decision of court given May 22, 1909.
6. *Norway* v. *Sweden.*
   Referred by a convention between the two countries on March 14, 1908.
   Question in dispute: The Delimitation of the Maritime Frontier.
   Decision of court given October 23, 1909.
7. *Great Britain* v. *United States.*
   Referred by agreement, February 6, 1909.
   Question in dispute: The Atlantic Fisheries.
   Decision of court given September 7, 1910.
8. *United States* v. *Venezuela.*
   Question in dispute: The Orinoco Steam Navigation Company.
   Decision of court given October 25, 1910.
9. *Great Britain* v. *France.*
   Referred by protocol signed October, 1910.
   Question in dispute: Case of Savarkar.
   Decision of court, February 24, 1911.

10. *Italy* v. *Peru.*
    Referred by compromis April 25, 1910.
    Question in dispute: Financial Claim of the Brothers Canevaro.
    Decision of court given May 3, 1912.
11. *Russia* v. *Turkey.*
    Referred by compromis July 22 and August 4, 1910.
    Question in dispute: Claim for Interest on Indemnity for Losses in Russo-Turkish War, 1877–78.
    Decision of court given November 11, 1912.

CASE TO BE TRIED BY THE HAGUE TRIBUNAL.

France v. *Italy.*
Referred by compromis March 6, 1912.
Question in dispute: The Seizure of the French Vessels *Carthage* and *Manouba*, by Italian Warships.

This is a case arising out of the Tripolitan War, the French vessels being supposed to be carrying combatants on the Turkish side and contraband of war.

THE NOBEL COMMITTEE OF THE NORWEGIAN PARLIAMENT.

Drammensvei 19, Christiania.

MEMBERS.

President—J. Loevland, ex-President of the Council of Ministers, ex-Minister for Foreign Affairs.
Vice Presidents—C. Berner, ex-President of the Storthing; H. Horst, member of The Hague Tribunal; F. Hagerup, ex-President of the Council of Ministers, Minister Plenipotentiary at Copenhagen.
Secretary—Ragnvald Moe.

THE NOBEL INSTITUTE, 1904.

Drammensvei 19, Christiania.

The Nobel Institute has for its object to watch the development of relations between the different peoples, and particularly the Pacifist movement, in order to be able to advise the Nobel committee in the distribution of the peace prizes. The institute will work also for the bringing together of peoples and the progress of justice and good will amongst the nations.

It is formed as follows:

For international law—M. H. Lie, University of Christiania.
For political history—H. Koht, University of Christiania.
For political economy—K. V. Hammer, archivist in the Ministry of Foreign Affairs.
For the history of the peace movement—Chr. L. Lange, general secretary of the Interparliamentary Union (honorary).
Librarian—Dr. Moe.
Sublibrarian—O. Selmer-Anderssen.
Assistant—Mlle. Augusta Horneman.

HOLDERS OF THE NOBEL PEACE PRIZE.

1901. MM. H. Dunant, Swiss, and Frederic Passy, French.
1902. MM. E. Ducommun and A. Gobat, both Swiss.
1903. Mr. W. Randal Cremer, English.

1904. Institut de Droit International, the first award to an institution.
1905. The Baroness von Suttner, Austrian.
1906. Mr. Theodore Roosevelt, American.
1907. MM. L. Renault, French, and Ernesto Teodore Moneta, Italian.
1908. MM. K. P. Arnoldson, Swede, and Frederik Bajer, Dane.
1909. MM. M. A. Beernaert, Belgian, and Baron d'Estournelles de Constant, French.
1910. The International Peace Bureau at Berne.
1911. MM. T. M. C. Asser, Dutch, and Alfred Fried, Austrian.

PERSONS WHO ARE ELIGIBLE FOR NOBEL PRIZES.

Candidates must be proposed to the Nobel committee of the Norwegian Parliament by a duly qualified person before February 1. The following persons alone are qualified to propose candidates:

1. Past and present members of the Nobel committee of the Norwegian Parliament, and members of the advisory board of the Nobel Institute.
2. Members of the parliaments and governments of different countries, and members of the Interparliamentary Union.
3. Members of the International Arbitration Court at The Hague.
4. Members of the commission of the International Peace Bureau.
5. Members and associates of the Institute of International Law.
6. University professors of law, of political science, of history, and of philosophy.
7. Persons who have received the Nobel peace prize.

The Nobel peace prize may be awarded to an institution or an association, not only to an individual. Any proposal must be accompanied by a statement of the grounds on which it is based, and by all documents to which reference is made. Proposals based on written works can not be considered unless the works have appeared in print. Further information can be obtained on inquiry by persons qualified as above from the Comité Nobel du Parlement Norvégien, Drammensvei 19, Kristiania, Norway.

INTERNATIONAL ORGANIZATIONS FOR PEACE.

CENTRAL AMERICAN COURT OF JUSTICE.

THE CARTAGO TRIBUNAL (COSTA RICA). (1908.)

Instituted as the result of a Central American Conference held at Washington, November-December, 1907, for settling differences between the Central American States.

PAN AMERICAN UNION, FORMERLY BUREAU OF AMERICAN REPUBLICS (1890).

Chairman ex officio—William J. Bryan.
Director—John Barrett.
Secretary—Francisco J. Yanes.
Office—Washington.

THE CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE.

2 Jackson Place, Washington, D. C.

On December 14, 1910, Andrew Carnegie transferred to a board of trustees $10,000,000 in 5 per cent first-mortgage bonds, valued at $11,500,000, the income of which will be devoted to "hastening the

abolition of international war." The methods by which the annual income can best be expended for this purpose were left by Mr. Carnegie to be determined by the trustees. The endowment is to be perpetual, and its large income will be exclusively devoted to the development of agencies that promise to best assist and most effectively promote that purpose so long as wars between nations continue.

The trustees have divided the work of the endowment into three divisions, the first of which is the division of intercourse and education, of which President Nicholas Murray Butler, of Columbia University, New York, is the acting director. The objects of this division, as set forth in the charter, are—

to diffuse information, and to educate public opinion regarding the causes, nature, and effects of war, and means for its prevention and avoidance; to cultivate friendly feelings between the inhabitants of different countries, and to increase the knowledge and understanding of each other by the civilized nations; to maintain, promote, and assist such establishments, organizations, societies, and agencies as shall be deemed necessary or useful in the accomplishment of the purposes of the corporation, or any of them.

The second division is that of economics and history, of which Prof. John Bates Clark, of Columbia University, is the director. The purposes of this division, as indicated in the charter, are "to promote a thorough and scientific investigation and study of the causes of war and of the practical methods to prevent and avoid it."

The third division is that of international law, of which Dr. James Brown Scott, the secretary of the endowment, is the director. This division has for its purpose—

to aid in the development of international law, and a general agreement on the rules thereof, and the acceptance of the same among nations; to establish a better understanding of international rights and duties and a more perfect sense of international justice among the inhabitants of civilized countries; to promote a general acceptance of peaceable methods in the settlement of international disputes.

CARNEGIE EUROPEAN BUREAU.

The European bureau was opened in Paris on March 24 last. Its program of work is the following:

To centralize and control information concerning the progress of international relations, and to state the best means of aiding their progress.

To establish, in particular, bonds of coordination between various movements, every day more numerous, which are working to the same end.

To discover and study initiatives worthy of encouragement, but too often isolated, and to bring then nearer together without interfering with the independence of each.

To rectify erroneous reports liable to disturb international relations.

To note works in various languages which would be of interest to translate and spread abroad, and to aid in the work of distribution.

To bring about international visits of a scientific or professional character—with the exception of political manifestation of every description.

To aid in the organization of lecture tours on the part of qualified lecturers on subjects connected with the new foundation.

To encourage the publication of works containing information to the general public on international problems.

To promote by means of textbooks a knowledge of international law and policy, but on no account to intervene in either the form or the interior or exterior policy of a State, "or to consider demands coming from persons or organizations susceptible of disturbing public order, or of exciting religious or antireligious feeling, or of creating attempts on the part of nationalities or parties against established powers."

General secretary—M. Jules Prudhommeaux.

Assistant secretary—M. Jules L. Puech.

Bureau—24 Rue Pierre Curie, Paris.

The important educational work in promotion of the peace and better organization of the world begun several years ago by Edwin Ginn, of Boston, under the name of the International School of Peace, and maintained at an expense of many thousand dollars a year, has now been definitely endowed by him, the work being largely expanded; and its complete organization and corporation were perfected at meetings in 1910. Mr. Ginn has now made legal provision for the payment to the trustees of $50,000 annually and by his will for the permanent continuance of an equal or greater income. The name of the institution has been changed from the International School of Peace to the World Peace Foundation. The organization comprises a board of trustees and a board of directors, the relation of the directors or active workers to the trustees being essentially the same as that of the faculty to the trustees of a college.

THE WORLD PEACE FOUNDATION.

Secretary to the board of directors, Edwin D. Mead.

INTERNATIONAL CONCILIATION, 1905.

The association called "Conciliation Internationale" has for object to develop national prosperity by means of good international relations, and to organize these good relations on a permanent and lasting basis.

President d'honneur—Léon Bourgeois, member of the Hague Tribunal, and Senator of France.

President and founder—Baron d'Estournelles de Constant, member of the Hague Tribunal, and Senator of France.

Treasurer—Albert Kahn, 102, Rue de Richelieu, Paris.

General secretaries—A. Métin and J. Rais.

INSTITUT DE DROIT INTERNATIONAL.

This institution was founded in 1873 for the promotion of international law, and to contribute toward the maintenance of peace, and the observation of the laws of war.

It consists of a maximum of 60 "membres effectifs" and 60 "membres associés." It has held 27 meetings—the first at Ghent, the last at Christiania.

President—M. Hagerup.

Secretary—Prof. Albéric Rolin, 11 Rue Savaen, Ghent, Belgium.

INTERNATIONAL LAW ASSOCIATION.

Founded at Brussels in 1873 for the study of international law. Membership includes philanthropists, merchants, and writers, as well as lawyers and statesmen; a large number being continental and American members.

It holds periodical conferences: 1905, Christiania; 1906, Berlin; 1907, Portland, U. S. A.; 1908, Budapest; 1910, London; 1912, Paris. A special conference was held in London to approve the General Arbitration Treaty with France, 1903.

Honorary president—The Lord Chief Justice of England.

President, 1910–1912—Maître E. Clunet, Paris.

Honorary treasurer—The Earl of Jersey.

Honorary general secretaries—G. G. Phillimore, B. C. L., Th. Baty, D. C. L., LL. D., barristers at law, 1, Mitre Court Buildings, Temple, E. C.

AMERICAN SOCIETY OF INTERNATIONAL LAW, AT WASHINGTON, 1905.

The American Society of International Law, founded at the Eleventh International Arbitration Conference at Lake Mohonk, in 1905, has for its object to aid the study of international law and the establishment of international relations based on law and justice.

President—Elihu Root.

Chairman—Oscar S. Straus.

Recording secretary—James B. Scott.

Corresponding secretary—Ch. H. Butler.

Treasurer—Chandler P. Anderson.

INSTITUT INTERNATIONAL DE LA PAIX, AT MONACO, 1903.

Founded by Prince Albert of Monaco, with a view to publishing documents relating to international law, the solution of international difficulties, statistics of war and armaments, the development of international institutions, pacific propaganda, and the history and bibliography of these questions.

General secretary—M. Gabriel Chavet, 4 Rue de Greffuhle, Paris VIII.

THE JEAN DE BLOCH FOUNDATION, 1902.

This foundation, created in 1902 for a period of 10 years, is legally recognized as being of public utility according to Swiss law, and has a capital of 50,000 roubles, left by M. de Bloch for propaganda purposes.

Its object is to hold conferences, and to issue publications on the conditions and the consequences—moral, economic, and social—of modern warfare.

The permanent committee of the Berne bureau controls the foundation under the authority of the State of Berne.

THE LUCERNE MUSEUM OF PEACE AND WAR, 1902.

Founded in 1902 by the late Jean de Bloch. It sets forth the results of armed peace and the consequences which would result from a European war.

Secretary—Dr. Bucher-Heller, Lucerne.

Director of the museum—J. Zimmerli.

THE UNION OF INTERNATIONAL ASSOCIATIONS.

The Union of International Associations was formed at Brussels in 1910 during the course of a world congress which represented 132 organizations. The program is as follows:

1. To classify the international associations (institutions, federations, leagues, congresses, institutes, commissions, permanent bureaus, etc.) that have come into existence during the past 50 years; to establish permanent relationships between them; to support their activities, lead them to cooperate, unify their methods, and coordinate their organizations and their programs.

2. To study systematically the general facts of international life, to extricate from them the practical concept of a world-wide organization founded equally upon justice, progress, both scientific and technical, and a broad representation of interests common to humanity.

3. To regard the international associations as the chief representatives of the diverse categories of world interests that they have internationally federated; to lead them to federate themselves on a broad basis for the purpose of unitedly pursuing an organized international life in all its branches.

4. To create an international center in which to house the material possessions necessary to the activities of the union and that of the affiliated societies, as well as to facilitate the administration of the great world interests.

5. To contribute to develop relations beyond the frontiers, to increase human solidarity, and to insure peace between the nations.

ORGANIZATION.

The World Congress meets at a minimum interval of three years. The Central Commission, composed of delegates of the association, meets annually. The central office acts as the executive organ of the union. It is assisted in its work by six commissions, on which all the associations may seek representation and which embrace all questions bearing on the outlook of mutual and interscientific relationships.

INTERNATIONAL CENTER.

The International Center has been established at Brussels, the actual seat of 65 international organizations. It is installed in a set of provisional quarters kindly placed at its disposal by the Belgian Government. A large number of associations have their abode here.

Address—Office Central des Associations Internationales, 3bis, rue de la Régence, Brussels.

OFFICE CENTRAL DES NATIONALITÉS.

General secretary—Jean Pelissier, 3 Rue Taitbout, Paris.

The objects of the bureau are as follows:

1. To collect documents, historical, ethnographical, literary, artistic, economic, psychological, social, of a nature to throw light on the present life, the past, and the future potentialities of each nationality;

2. To publish a monthly bulletin which will in an impartial manner acquaint the public with every effort toward higher ideals, and progress of every description accomplished by the nationalities represented at this bureau;

3. To communicate to the press all news interesting to these nations;

4. To give to different nationalities ignorant of one another the means of their becoming acquainted; to raise their emulations by taking a lesson one from the other; to make them appreciate the solidarity which unites them and the necessity that international federation should triumph in order to assure the autonomy of each of them;

5. To favor scientific missions into the various countries of the globe, to organize congresses, conferences, and meetings at which shall be discussed questions of the day concerning these nationalities; to receive and honor strangers of note; to encourage, in Paris, groupings together of the various nationalities so that the different groups should mix with one another in friendly intercourse; and to create or erect in Paris an international palace and museum for nationalities.

The organ of the bureau is "Les Annales des Nationalités," published monthly.

THE GARTON FOUNDATION.

The Garton Foundation was formed for promoting the impartial study of the facts of international relationship. Its object is to aid in the creation of a body of opinion that shall be more informed as to the fundamental facts which bear on international questions, irrespective of the solution to which the facts may point. It seeks—

1. To stimulate public interest in the subject by means of lectures and debates.

2. To encourage the more systematic study of the subject in universities, colleges, schools, polytechnics, and other institutions, and, with this end, to endow bursaries and scholarships, to found prizes, and to help in the formation of libraries.

3. To make the foundation a center for coordinating all similar efforts by other organizations in Great Britain and to cooperate with similar foreign organizations.

Secretary—Capt. the Hon. Maurice Brett, the Garton Foundation, Whitehall House, Whitehall, London, S. W.

THE INTERNATIONAL PEACE BUREAU.

Director—Dr. A. Gobat, member of the Swiss National Council.

General secretary and editor of "The Peace Movement"—Henri Golay.

Organ—"The Peace Movement," issued at least once a month in French, German, and English.

The Société du Bureau consists of institutions, associations, and individuals. Its aim is:

(*a*) To supply information on questions relating to the propaganda and defense of the ideas common to the institutions, associations, and persons working for peace and to facilitate relations between the same.

(*b*) To arrange for the consideration and preparation of questions which may be placed before the congresses, conferences, and other gatherings which are willing to make use of the bureau and to help the local committee of each such gathering in matters of organization.

(*c*) To carry out the decisions of these gatherings.

(*d*) To classify and preserve the archives of these gatherings, also all papers confided to its care, and all that has bearing upon the movement for peace and arbitration.

(*e*) To form a library of all publications relating to peace, including newspapers, official publications, etc., bearing on peace.

(*f*) To collect together, as far as possible, all decisions given in cases of arbitration between nations, and to summarize in such form as to constitute a kind of practical jurisprudence of this question.

(*g*) To maintain an up-to-date bibliography of peace publications.

INTERNATIONAL PEACE CONGRESSES.

First Series.

1848. Brussels.
1849. Paris.
1850. Frankfort.
1851. London.
1853. Edinburgh.

SECOND SERIES.

1889. Paris.
1890. London.
1891. Rome.
1892. Berne.
1893. Chicago.
1894. Antwerp.
1896. Budapest.
1897. Hamburg.
1900. Paris.
1901. Glasgow.
1902. Monaco.
1903. Rouen.
1904. Boston.
1905. Lucerne.
1906. Milan.
1907. Munich.
1908. London.
1910. Stockholm.
1912. Geneva.

THE SCHOOL PEACE LEAGUE.

(Great Britain and Ireland.)

This league is mainly intended to enlist the interest, sympathy, and support of teachers, but membership is open to all who are actively engaged in the work of education.

AIMS.

1. To promote, through the schools, international peace, arbitration, and friendship.

2. To study, in meetings and conferences, the problems of racial relationships, and the best means of developing in the minds of children right ideas concerning them.

3. To further the introduction, into the teaching of civics and history, of a knowledge of the international peace movement, the Hague conferences, as the embryo world parliament, the Hague tribunal, and the growth of international interests and means of communication.

4. To suggest lessons and courses of lessons in civics, and the lines of development of a rational and humane national life and patriotism, together with the corresponding duties to humanity.

5. To print and circulate literature bearing upon these points among teachers of all kinds.

6. To foster the spirit of courage and devotion in the pacific spheres of industry and social service.

7. To work in connection with similar organizations abroad for the establishment of an international organization.

President.—Right Rev. the Bishop of Hereford.

Chairman.—C. E. Maurice.

Hon. Treasurer.—Rev. F. W. Aveling, M. A., B. Sc.

Hon. Secretary.—Victor Leuliette, B. ès. L., A. K. C., 167 St. Stephen's House, Westminster, S. W.

The School Peace League has at present two committees at work, one of which devotes itself to the question of history teaching and textbooks used in schools.

The following organizations are now represented on the committee of the league:

Headmistresses' Association.—Mrs. Sophie Bryant, D. Sc.
National Union of Teachers.—Mr. W. A. Nicholls.
London Teachers' Association.—Mr. Clifford Smith.
Private Schools Association.—Mr. F. J. Whitbread.
Parents' National Educational Union.—Mrs. Roper.
Sunday School Union.—Sir Francis Belsey.

The remaining members of the committee are teachers in public secondary and elementary schools and in private schools. There is also a General Council of some 60 men and women well known in public life and in the educational world.

THE AMERICAN SCHOOL PEACE LEAGUE.

The American School Peace League was organized in 1908 for the purpose of promoting through the schools and the educational public of America the interests of international justice and fraternity.

All teachers in the schools of the country; students in secondary schools, normal schools, and colleges; and persons otherwise enlisted in the general work of education may become members without the payment of dues by signifying their devotion to the purpose of the league. Any person who pays annually $1 is a sustaining member, any person who pays annually $5 is a contributing member, and any person who pays $25 or more annually is a patron.

The aims of the league are—

I. To acquaint the teachers of the United States with the movement for promoting a fuller acquaintance and better understanding among the peoples of different nations.

II. To prepare material which will enable teachers to make appropriate applications to the specific work of the school.

III. To secure the interest of teachers in all countries in the movement for international cooperation, so that the coming generations of all nations may be trained simultaneously to recognize the efficiency of judicial and legislative measures in the constantly increasing relations among the nations of the world.

FIRST AIM.

Teachers are reached through teachers' conventions, teachers' institutes, and summer schools; through the educational press; and through the circulation of publications which especially concern the teacher's relation to the international movement.

At least two-thirds of the State teachers' associations, many county associations, the American Institute of Instruction, the Southern Education Association, and the National Education Association have seriously discussed the relation of the international movement to teaching and have passed resolutions in support. The American Institute of Instruction held a joint session with the American School

Peace League in July, 1912, in North Conway, N. H. The league is invited to hold its annual convention with the National Education Association, and headquarters are now established where large numbers of teachers from all over the country take the opportunity to examine the literature and to talk over specific lines of work in their respective communities.

The annual conventions of the league have been held, respectively, in Denver, Boston, San Francisco, and Chicago. The fifth annual convention will be held in Salt Lake City in July, 1913. At the third and fourth annual conventions, held, respectively, in San Francisco, July, 1911, and in Chicago, July, 1912, about 100,000 pamphlets were distributed at each convention from the headquarters. The public meeting of the league at the fourth annual convention in Chicago was held on the afternoon of July 11, 1912, and was attended by about 1,200 people. President David Starr Jordan presided and gave an introductory address on the educational phase of the peace movement. Following this was an address by Wilbur F. Gordy on "Teaching Peace through History," after which four orations on the subject, "*Resolved*, That all international disputes should be settled by arbitration," were given by four Chicago high-school students, who had been selected as a result of a competitive contest among the students of the high schools of Chicago. The oratorical contest was in charge of Mr. Samuel Leland, teacher of English in the McKinley High School. Following the orations, which were listened to with great interest, was an address by Baroness Bertha von Suttner, of Austria, who spoke on the progress of the peace movement in Europe and America.

At one of the general sessions of the National Education Association Baroness von Suttner addressed the gathering of 5,000 people on "Peace and Arbitration," and at the annual business meeting of the National Education Association the following resolution was passed:

> The National Education Association again records its interest in the cause of world peace, which it regards as one of the great educational movements of the age. The association especially calls attention to the helpful material prepared by the American School Peace League, which is admirably adapted to the school program. The association commends most highly the active interest taken by United States Commissioner Philander P. Claxton in disseminating information on the subject, especially in his publication of the Peace Day bulletin.
>
> The National Education Association regards the present attempt to establish compulsory military training in the schools of the country not designed primarily for military training as reactionary and inconsistent with American ideals and standards.

The mid-year meeting of the league is held in the month of February, during the convention of the Department of Superintendence of the National Education Association.

Some of the large summer schools of the country, composed almost wholly of teachers, have given lecture courses on the international

peace movement and have distributed large quantities of literature. These summer schools have considered very carefully the course in citizenship which has been prepared by the Massachusetts branch of the league.

SECOND AIM.

The league is preparing two kinds of material for the use of teachers:

1. The course in history.—The committee on history has made a wide investigation of the status of history teaching in the United States. The report of this committee shows that:

> There is evidence that in some school systems much time is devoted to the study of (1) such useless details as unimportant dates and statistical matter; (2) the complex principles underlying the organization and evolution of political parties; and (3) battles and military campaigns.

The committee points out that:

> While the history committee of the American School Peace League regrets the time wasted in all the ways just enumerated, it wishes to call special attention to the overemphasis given by our public schools to political and military history. Inasmuch as the State is the most complex of all the institutions established by human society, in putting an overemphasis on the political side of life the schools are trying to teach what the pupil is not ready to understand and are failing to give proper consideration to such cases of institutional life as he can understand and what it is far more important for him to know. But by far the greatest waste in history teaching results from the excessive and disproportionate amount of time which is spent in the study of wars. Of course wars should be studied and they should receive much attention, because they have played an important part in both racial and national evolution, but such study should not involve the teaching of the military minutiæ of campaigns and battles.

The committee is now preparing a manual on the teaching of history, which will include a model course of study, with detailed and explicit suggestions for the teacher. The members of the history committee are as follows: Wilbur F. Gordy, chairman, Hartford, Conn.; Philander P. Claxton, United States Commissioner of Education, Washington, D. C.; James H. Van Sickle, superintendent of schools, Springfield, Mass.; Charles E. Chadsey, superintendent of schools, Detroit, Mich.; John W. Hall, professor of education in the University of Cincinnati.

2. The course in citizenship.—In 1910 the committee on methods of the Massachusetts branch of the American School Peace League was appointed to work out a plan by which teachers can advance the object of the league. In its first deliberations the committee recognized that such a plan must deal with the problem of citizenship, since it is the action of citizens which governs the movement for international justice and fraternity. To define the principles of citizenship applicable to the promotion of the international spirit, and the method of inculcating an appreciation of the duties and obligations implied therein, became the first work of the committee.

The committee has prepared a course in citizenship which is designed to cover the first eight grades of school. The early grades are devoted to the ties of home life; the next proceed with the school and the playground; then the city and State; the Nation; and the world. The course leads the pupil into the study of international rights and obligations. He is taught to appreciate other peoples and other civilizations, and to understand the special mission of the United States in world progress.

The committee is now collecting suitable material for each grade from history, literature, geography, and civics to illustrate these lessons.

THIRD AIM.

The league's third line of action is its effort to secure the interest of teachers in all countries in the movement for international cooperation. Following the three European trips of the secretary, plans have been made to form an international council of education. To many people the organization of an international council of education seemed such an important matter, possessed of such great opportunities for the advancement of education in general, that it appeared wise to make it a governmental affair. The plan proposed is to hold an international conference on education which shall have two objects: First, to discuss educational questions which are of common interest to the educators of different nations; and second, to organize a permanent international council of education. This council would have, presumably, two chief functions:

1. To offer a means by which the educational authorities in one country may be kept abreast of the educational progress in other countries, serving in this capacity as a bureau of exchange and also as a bureau for the translation and exchange of standard educational literature. To make the bureau efficient and authentic, permanent committees of investigation and research should be constantly at work.

2. To arrange biennial or triennial conferences on education. At the request of the American School Peace League, the United States Commissioner of Education presented the matter to the Department of State, and at the suggestion of the United States Government, the Government of the Netherlands has invited the nations to participate in a conference to convene at The Hague in September, 1913.

ORGANIZATION.

The league has now 35 State branches, most of which have been formed in connection with the State teachers' associations. The annual meetings of the branches are held at the time of the State conventions, and many of the State teachers' associations give the State

School Peace League a place on their programs. Several have made the State branch of the league a regular department of the State teachers' association. This insures the printing and circulating of the program, a stated time and place for the meeting, and the printing of the proceedings. The ultimate aim of organization is to make the State branch of the league a corporate part of the State teachers' association.

One of the most important objects of the State branches is to induce teachers to study the international peace movement and to make appropriate applications to the specific work of the school. A distinctive feature of some of the branches is the organization of local peace leagues—in counties, high and normal schools, and colleges. There are at the present time 34 such branches. These are designated as branches or chapters of the State branch. These leagues have regular meetings, and in many cases provide the Peace Day exercises for the school or college. They also stimulate orations and the writing of essays on international peace.

The branches have been vigilant in procuring peace literature for school, college, and public libraries. Through their influence several of the State library commissions have recommended placing peace literature in libraries.

The State branches have also proved very effective in creating an interest in the peace prize contest. Appeals for literature come from every State in the Union, and 140 essays from 29 States were handed in this year. The contest is open to students all over the world. Nineteen foreign essays have been sent in, and of these, three have received honorable mention.

PLAN OF STATE BRANCH WORK.

1. To reach all educational gatherings and the summer schools of the State with good speakers, and through the distribution of literature.

2. To reach the educational and daily press of the State.

3. To place peace literature in public, school, college, and traveling libraries; to encourage the organization of study circles for the purpose of working out practical helps for teachers; to include peace literature in study circle lists.

4. To encourage teaching of history which shall accord with the twentieth century idea of international progress.

5. To procure the observance of the 18th of May.

6. To encourage the organization of branch leagues in high and normal schools.

7. To encourage the preparation of orations and essays on international arbitration.

OFFICERS.

President, James H. Van Sickle, superintendent of schools, Springfield, Mass.

Secretary, Mrs. Fannie Fern Andrews, 405 Marlborough Street, Boston, Mass.

Treasurer, F. E. Spaulding, superintendent of schools, Newton, Mass.

BRANCHES.

Arkansas State branch:
President, W. A. Ramsey, Fayetteville.
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Walnut Ridge High School branch.—President, Miss Ethel Followwill, Walnut Ridge, Ark.
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COMMITTEES.

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Philander P. Claxton, United States Commissioner of Education, Washington, D. C.
James H. Van Sickle, superintendent of schools, Springfield, Mass.
Charles E. Chadsey, superintendent of schools, Detroit, Mich.
John Hall, professor of education, University of Cincinnati, Cincinnati, Ohio.

This committee is preparing a manual for teachers on the teaching of history in the elementary schools, which includes a very carefully worked out course of study in American history. This will be published by the league as soon as completed.

COMMITTEE ON METHODS OF THE MASSACHUSETTS BRANCH.

Adelbert L. Safford, superintendent of schools, Chelsea, chairman.
Mrs. Ella Lyman Cabot, member Massachusetts Board of Education, Boston.
William Orr, deputy commissioner Massachusetts Board of Education, Boston.
Mrs. Emma S. Gulliver, principal of Dillaway School, Roxbury.

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F. E. Spaulding, superintendent of schools, Newton.
Miss Fanny E. Coe, Normal School, Boston.
James H. Van Sickle, superintendent of schools, Springfield.
Mrs. Fannie Fern Andrews, secretary American School Peace League, Boston.

This committee has worked out a course in citizenship, covering the first eight grades of school. It bases instruction on the actual developing concrete situations and contacts of the child with its social environment, and kindred experiences in the lives of others.

The committee has worked out in careful detail the plan for the books which are to be published, and has gathered much of the material. Each book will cover one grade, and it is hoped that these will be ready for publication at the end of the year.

Peace Prize Contests.

The American School Peace League.

Open to Pupils of all Countries.

Two sets of prizes, to be known as the Seabury Prizes, are offered for the best essays on one of the following subjects:

1. *The Opportunity and Duty of the Schools in the International Peace Movement.* Open to seniors in the normal schools of the United States.

2. *The Significance of the Two Hague Peace Conferences.* Open to seniors in the secondary schools of the United States.

Three prizes of $75, $50, and $25 will be given for the three best essays in both sets.

This contest is open for the year 1913 to the pupils of the secondary and normal schools in all countries.

American judges.

David Starr Jordan, president Leland Stanford Junior University, Palo Alto, Cal.
William H. Maxwell, superintendent of schools, New York City.
Endicott Peabody, headmaster, Groton School, Groton, Mass.
Miss Edith C. Westcott, principal of Western High School, Washington, D. C.
Charles E. Chadsey, superintendent of schools, Detroit, Mich.
Charles T. C. Whitcomb, principal of high school, Brockton, Mass.
V. L. Roy, president State Normal School, Natchitoches, La.
Albert J. Roberts, principal of high school, Helena, Mont.
Henry G. Williams, dean of State Normal College of Ohio University, Athens, Ohio.
Miss Ada Van Stone Harris, Pittsburgh, Pa.

European judges.

Henri La Fontaine, Senator of Belgium, Brussels, professor of international law, president of the International Peace Bureau at Berne.
Ferdinand Buisson, member of the Chamber of Deputies, Paris, honorary professor at the University of Paris, honorary director of primary education to the Minister of Public Instruction, Paris.
Kirchenrat Kroner, Stuttgart, Germany.
Count Angelo de Gubernatis, professor at the University of Rome, Italy.
Emile Arnaud, president of the International League of Peace and Liberty, vice president of the International Peace Bureau, president of the educational commission of the Universal Peace Congress, Luzarches, France.

Contest closes March 1, 1913.

Conditions of the contest.

Essays must not exceed 5,000 words (a length of 3,000 words is suggested as desirable), and must be written, preferably in typewriting, on one side only of paper, 8 by 10 inches, with a margin of at least 1¼ inches. Manuscripts not easily legible will not be considered.

The name of the writer must not appear on the essay, which should be accompanied by a letter giving the writer's name, school, and home address, and sent to Mrs. Fannie Fern Andrews, Secretary American School Peace League, 405 Marlborough Street, Boston, Mass., not later than March 1, 1913. Essays should be mailed flat (not rolled).

The award of the prizes will be made at the annual meeting of the league in July, 1913.

Information concerning literature on the subject may be obtained from the secretary.

In 1912 one hundred and thirty-four essays were received from five countries. Twenty-eight States in this country were represented. The winners of the prizes were:

Normal school essays:

First prize—Miss Margaret E. Foster, Normal School, Boston, Mass.

Second prize—Charles Blue, State Normal University, Normal, Ill.

Third prize—Miss Mary Armistead Holt, State Normal School, Farmville, Va.

Secondary school essays:

First Prize—Fred Weinard, High School, Lincoln, Nebr.

Second prize—Philip Lowry, High School, Erie, Pa.

Third prize—Miss Libbie Weiss, Girls' High School, Brooklyn, N. Y.

Lake Mohonk Conference.

In addition to the above, the Lake Mohonk conference on international arbitration announced two sets of prizes to be awarded for similar work. These are as follows:

1. A first prize of $200 and a second prize of $100 for the best essays on "International Peace," by undergraduate women students of any college or university in the United States.

2. A prize of $100 for the best essay on "International Arbitration," by an undergraduate man student of any college or university in the United States or Canada.

Full information concerning the conditions of these contests may be obtained from the secretary of the conference, Lake Mohonk, New York.

Lindgren Peace Fund.

The committee of direction of the Lindgren Peace Fund also announced a set of prizes for the year 1913, open to the pupils of the high schools of the United States. The subject selected for the essays was "The Reasonableness of the Demand for International Peace." The committee divided the country into seven groups, and in each group were offered three prizes of $35, $20, and $10, respectively, for the first, second, and third best essays. An additional prize of $50 was offered for the essay given first place in the whole contest.

Full information concerning the conditions of this contest may be obtained from the secretary of the committee, Prof. J. A. James, University Hall, Evanston, Ill.

SELECTIONS FOR PEACE DAY.

ODE SUNG AT THE OPENING OF THE INTERNATIONAL EXHIBITION.

Uplift a thousand voices full and sweet,
In this wide hall with earth's invention stored,
And praise th' invisible universal Lord,
Who lets once more in peace the nations meet,
Where Science, Art, and Labor have outpour'd
Their myriad horns of plenty at our feet.

O silent father of our Kings to be
Mourn'd in this golden hour of jubilee,
For this, for all, we weep our thanks to thee!

The world-compelling plan was thine,
And lo! the long laborious miles,
Of Palace; lo! the giant aisles,
Rich in model and design;
Harvest tool and husbandry,
Loom and wheel and engin'ry,
Secrets of the sullen mine,
Steel and gold, and corn and wine,
Fabric rough, or Fairy fine,
Sunny tokens of the Line,
Polar marvels, and a feast
Of wonder out of West and East,
And shapes and hues of Art divine!

All of beauty, all of use,
That one fair planet can produce.
Brought from under every star,
Blown from over every main,
And mixt, as life is mixt with pain,
The works of peace with works of war.

O ye, the wise who think, the wise who reign,
From growing commerce loose her latest chain,
And let the fair white-winged peacemaker fly
To happy havens under all the sky,
And mix the seasons and the golden hours,
Till each man finds his own in all men's good,
And all men work in noble brotherhood,
Breaking their mailed fleets and armed towers,
And ruling by obeying Nature's powers,
And gathering all the fruits of peace and crown'd with all her flowers.

—Alfred Tennyson.

ILLUSIONS OF WAR.

War
I abhor
And yet how sweet
The sound along the marching street
Of drum and fife! And I forget
Wet eyes of widows, and forget
Broken old mothers, and the whole
Dark butchery without a soul.

Without a soul—save this bright drink
Of heavy music, sweet as death;
And even my peace-abiding feet
Go marching with the marching street;
For yonder, yonder, goes the fife,
And what care I for human life?

The tears fill my astonished eyes,
  And my full heart is like to break;
And yet 'tis all embannered lies,
  A dream those little drummers make.

Oh, it is wickedness to clothe
  Yon hideous grinning thing that stalks
Hidden in music, like a queen
  That in a garden of glory walks
Till good men love the thing they loathe!

Art, thou hast many infamies
  But not an infamy like this.
Oh, snap the fife and still the drum
  And show the monster as she is!

—Richard Le Gallienne.

NEED OF THE HOUR.

Fling forth the triple-colored flag to dare
The bright untraveled highways of the air.
Blow the undaunted bugles, blow, and yet
Let not the boast betray us to forget.
Lo, there are high adventures for this hour,
Tourneys to test the sinews of our power;
For we must parry, as the years increase,
The hazards of success, the risks of peace!
  What do we need to keep the nation whole,
To guard the pillars of the state? We need
The fine audacities of honest deed,
  The homely old integrities of soul,
The swift temerities that take the part
Of outcast right, the wisdom of the heart—
Brave hopes that Mammon never can detain
Nor sully with his gainless clutch for gain.

—Edwin Markham.

THE COMING DAY OF PEACE.

(Tune: Battle Hymn of the Republic.)

Mine eyes have seen the dawning
Of a bright and glorious day,
When the war god's reign of anguish
Shall fore'er have passed away,
When the Prince of Peace in beauty
O'er the nations shall hold sway,
For truth the day must gain.

Chorus.

Glory, glory, hallelujah! Glory, glory, hallelujah!
Glory, glory, hallelujah! The Prince of Peace shall reign.

No more shall mangled corpses
Strew the cursed battle plain
While the tears of stricken women
Fall like floods of scalding rain,
And the nation's hands are branded
With the bloody mark of Cain,
For peace the day must gain.

The plow in peaceful industry
Shall supersede the sword,
And the pruning hook the bloody spear,
For so hath said His word;
While the nations trust for safety
In the banner of the Lord,
For peace at last must reign.

—Virginia Journal of Education.

A LOFTIER RACE.

(Tune: Duke Street.)

These things shall be! A loftier race
Than e'er the world hath known shall rise,
With flame of freedom in their souls
And light of knowledge in their eyes.

They shall be gentle, brave, and strong,
Not to spill human blood, but dare
All that may plant man's lordship firm
On earth and fire and sea and air.

Nation with nation, land with land,
Unarmed shall live as comrades free;
In every heart and brain shall throb
The pulse of one fraternity.

New arts shall bloom, of loftier mold,
And mightier music thrill the skies;
And every life shall be a song,
When all the earth is paradise.

There shall be no more sin nor shame,
And wrath and wrong shall fettered lie;
For man shall be at one with God
In bonds of firm necessity.

—John Addington Symonds.

Oh, East is East, and West is West, and never the twain shall meet,
Till Earth and Sky stand presently at God's great Judgment Seat;
But there is neither East nor West, Border, nor Breed, nor Birth,
When two strong men stand face to face, tho' they come from the ends of the earth!

—From The Ballad of East and West, by Rudyard Kipling.

THE REIGN OF PEACE.

(From Beacon Lights of Patriotism. By courtesy of Silver, Burdett & Co., Boston.)

Beautiful vision! how bright it rose—
Vision of peaceful and calm repose!
Well might it brighten the rapt seer's eye,
And waken his heart to an ecstasy!
'Twas earth, glad earth, when her strife was o'er,
Her conflict ended, and war no more.

Households are grouped in the fig-tree's shade,
None to molest them or make afraid;
Securely rest 'neath the house-side vine
Parent and child from the noon sunshine;
Nations rejoice in the blest release,
And the voice of Earth is a voice of peace.

Beautiful vision; and shall it be
Surely accomplished, O Earth, in thee?
The sword of war, shall it scathe no more
The peaceful scenes of the softest shore?
And light stream down from the radiant skies
On scenes of the war god's sacrifice?

Ay! for the word of the prophet is true.
Fair was the vision; but full in view,
The Moslem's saber, all keen and bright,
Burnished and bare for the ready fight;
Sheath it he will, and in spirit be
Like the turtle dove in his cypress tree.

The vines of Judah shall then be pruned,
Her broken harp be again attuned;
And listening Earth, from her farthest shore,
Startled not now by the cannon's roar,
Songs of the angels shall hear again:
"Peace on earth, and good will to men!"

—Eliza Thornton.

GOD BLESS OUR FATHERLAND.

(By courtesy of Houghton Mifflin Co., Boston.)

(Tune: "America.")

God bless our fatherland,
Keep her in heart and hand
One with our own;
From all her foes defend,
Be her brave people's friend;
On all her realms descend;
Protect her throne.

Father, in loving care
Guard Thou her kingdom's heir,
Guide all her ways;
Thine arm his shelter be
From harm by land and sea;
Bid storm and danger flee;
Prolong his days.

Lord, bid war's trumpet cease;
Fold the whole earth in peace
Under Thy wings;
Make all Thy nations one,
All hearts beneath Thy sun,
Till Thou shalt reign alone,
Great King of kings.

—O. W. Holmes.

RING IN THE LARGER HEART.

(By courtesy of the Macmillan Co., New York.)

(Tune: Ward (Lowell Mason)—L. M.)

Ring out a slowly dying cause,
And ancient forms of party strife;
Ring in the nobler modes of life,
With sweeter manners, purer laws:

Ring out false pride in place and blood,
The civic slander and the spite;
Ring in the love of truth and right,
Ring in the common love of good.

Ring in the valiant men and free,
The larger heart, the kindlier hand;
Ring out the darkness of the land.
Ring in the Christ that is to be.

—Tennyson.

PEACE ON THE EARTH.

It came upon the midnight clear,
That glorious song of old,
From angels bending near the earth
To touch their harps of gold;
"Peace on the earth, good will to men,
From Heaven's all gracious King:"
The world in solemn stillness lay
To hear the angels sing.

Still through the cloven skies they come
With peaceful wings unfurled,
And still their heavenly music floats
O'er all the weary world;
Above its sad and lowly plains
They bend on heavenly wing,
And ever o'er its Babel sounds
The blessed angels sing.

For lo! the days are hastening on,
By prophet-bards foretold,
When with the ever-circling years
Comes 'round the age of gold;
When peace shall over all the earth
Its ancient splendors fling,
And the whole world send back the song
Which now the angels sing. Amen.

—E. H. Sears.

A VOICE FROM THE WEST.

(By courtesy of the Macmillan Co., New York.)

What is the Voice I hear
On the wind of the Western Sea?
Sentinel! listen from out Cape Clear,
And say what the voice may be.
"'Tis a proud, free People calling loud
To a People proud and free.

"And it says to them, 'Kinsmen, hail!
We severed have been too long;
Now let us have done with a worn-out tale,
The tale of an ancient wrong,
And our friendship last long as Love doth last,
And be stronger than Death is strong.'"

Answer them, Sons of the self-same race,
And blood of the self-same clan,
Let us speak with each other, face to face,
And answer, as man to man,
And loyally love and trust each other,
As none but free men can.

Now, fling them out to the breeze,
  Shamrock, Thistle, and Rose!
And the Star-Spangled Banner unfurl with these,
  A message to friends and foes,
Wherever the sails of Peace are seen,
  And wherever the War-wind blows.

A message to bond and thrall to wake,
  For, whenever we come, we twain,
The Throne of the Tyrant shall rock and quake,
  And his menace be void and vain:
For you are lords of a strong young land,
  And we are lords of the main.

Yes, this is the Voice on the bluff March gale,
  "We severed have been too long:
But now we have done with a worn-out tale,
  The tale of an ancient wrong,
And our friendship shall last as Love doth last,
  And be stronger than Death is strong."

—Alfred Austin.

THE SOLDIERS' RECESSIONAL.

(By courtesy of Scribner's Magazine.)

Down from the choir with feebled step and slow,
Singing their brave recessional they go,
  Gray, broken, choristers of war,
Bearing aloft before their age-dimmed eyes,
As 'twere their cross for sign of sacrifice,
  The flags which they in battle bore,—

Down from the choir where late with hoarse throats sang
Till all the sky-arched vast cathedral rang
  With echoes of their rough-made song,
Where roared the organ's deep artillery,
And screamed the slender pipe's dread minstrelsy
  In fierce debate of right and wrong.

Down past the altar, bright with flowers, they tread,
The aisles 'neath which in sleep their comrades dead
  Keep bivouac after their red strife,
Their own ranks thinner growing as they march
Into the shadows of the narrow arch
  Which hides the lasting from this life.

Soon, soon will pass the last gray pilgrim through
Of that thin line in surplices of blue
  Winding as some tired stream a-sea;
Soon, soon, will sound upon our list'ning ears
His last song's quaver as he disappears
  Beyond our answering litany;

And soon the faint antiphonal refrain,
Which memory repeats in sweetened strain,
  Will come as from some far cloud shore;
Then, for a space the hush of unspoke prayer,
And we who've knelt shall rise with heart to dare
  The thing in peace they sang in war.

—John H. Finley.

SONG OF PEACE.

(By courtesy of the Author.)

Forward, all ye faithful,
  Seeking love and peace,
Hast'ning on the era
  When all strife shall cease;
All the saintly sages,
  Lead us in the way,
Forward in their footsteps,
T'ward that perfect day.

Chorus:

Forward, all ye faithful,
  Seeking love and peace,
Hast'ning on the era
  When all strife shall cease.

Raise the voice of triumph,
  "Peace on earth, good will";
Angels sang this anthem,
  Let us sing it still;
War's foundations quiver
  At this song of peace,
Brothers, let us sing it
  Till all strife shall cease.

Chorus: Forward, etc.

Children of one Father
  Are the nations all;
"Children mine, beloved,"
  Each one doth He call;
Be ye not divided,
  All one family;
One in mind and spirit
  And in charity.

Chorus: Forward, etc.

Wealth and pow'r shall perish,
  Nations rise and wane;
Love of others only
  Steadfast will remain;
Hate and Greed can never
  'Gainst this love prevail;
It shall stand triumphant
  When all else shall fail.

Chorus: Forward, etc.

—M. K. Schermerhorn.

FESTIVAL HYMN.

O Peace! on thine upsoaring pinion
  Thro' the world thine onward flight taking,
  Teach the nations, their turmoil forsaking,
To seek thine eternal dominion.
From the Infinite Father descending,
  O come with thine influence tender;
  And show us how duly to render
To Him our glad praise never ending.
O Music! thy source, too, is holy,
  Thro' thy pow'r ev'ry heart now uniting,
  With thy magic each true soul delighting,
Blessed bond 'twixt the high and the lowly,
Thro' thee the great Father adoring,
  Thy language is known to each nation,
  Thro' thee the vast Hymn of Creation,
From tongues without number outpouring.

O Music! O Peace!
Happy blending of voices and hearts,
  Of voices and hearts in sweet lays:
In this union, to God's holy praise,
Ever thus your pure influence lending.

Jehovah! thou Sov'reign of nations!
  Sweet Peace to our land Thou hast granted;
  Be Thy praises eternally chanted,
    In Music forevermore!
Jehovah! thou Sov'reign of nations!
  Sweet Peace to our land Thou hast granted;
  Be Thy praises eternally chanted,
    In Music forevermore.
  Aye! forevermore, aye, forevermore,
  In Music forevermore.
    Amen! Amen! Amen! Amen!

—Dudley Buck.

AMERICA.

My country—'tis of thee,
Sweet land of liberty,
  Of thee I sing;
Land where my fathers died,
Land of the pilgrims' pride,
From every mountainside
  Let freedom ring.

My native country—thee,
Land of the noble, free,
  Thy name I love;
I love thy rocks and rills,
Thy woods and templed hills,
My heart with rapture thrills,
  Like that above.

Let music swell the breeze,
And ring from all the trees
Sweet freedom's song;
Let mortal tongues awake,
Let all that breathe partake,
Let rocks their silence break—
The sound prolong.

Our fathers' God—to thee,
Author of liberty,
To Thee we sing;
Long may our land be bright
With freedom's holy light,
Protect us by Thy might,
Great God—our King.

RECESSIONAL.

God of our fathers, known of old—
Lord of our far-flung battle line—
Beneath whose awful Hand we hold
Dominion over palm and pine—
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

The tumult and the shouting dies—
The captains and the kings depart—
Still stands Thine ancient sacrifice,
An humble and a contrite heart.
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

Far-called our navies melt away—
On dune and headland sinks the fire—
Lo, all our pomp of yesterday
Is one with Nineveh and Tyre!
Judge of the Nations, spare us yet,
Lest we forget—lest we forget!

If, drunk with sight of power, we loose
Wild tongues that have not Thee in awe—
Such boasting as the Gentiles use,
Or lesser breeds without the law—
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

For heathen heart that puts her trust
In reeking tube and iron shard—
All valiant dust that builds on dust,
And guarding calls not Thee to guard—
For frantic boasts and foolish word,
Thy mercy on Thy people, Lord.

—Rudyard Kipling.

QUOTATIONS.

Peace hath her victories, no less renowned than war.—Milton.

Enlightened public opinion is stronger than armies.—Lord Palmerston.

To those of a noble disposition the whole world is but one family.
—From the Hindu.

Peace is the expression of that love which is the fulfilling of the law.
—Pope Innocent III.

War is the most futile and ferocious of human follies.—John Hay.

The rage and violence of public war, what is it but a suspension of justice among the warring parties. —Hume.

War is a most detestable thing. If you had seen but one day of war, you would pray God you might never see another. —Wellington.

I am tired and sick of war. Its glory is all moonshine. It is only those who have neither fired a shot nor heard the shrieks and groans of the wounded who cry aloud for more blood, more vengeance, more desolation. War is hell.
—General Sherman.

Nations are gravitating into union; not giving up any essential qualities of independence or individuality, but confederating with each other under the attraction of mutual affinities. Then why may we not link these large circles of humanity into one grand system of society, by creating for it a common center and source of attraction in the establishment of a high court of nations? —Elihu Burritt.

Justice is as strictly due between neighbor nations as between neighbor citizens. A highwayman is as much a robber when he plunders in a gang as when single, and a nation that makes an unjust war is only a great gang. —Benjamin Franklin.

I know of nothing which better marks the high moral tone of modern history than that the sublime code of international law should have come into form and established its authority over the civilized world within so short a time; for it is now scarcely more than two hundred years since it took its being. —Horace Bushnell.

Observe good faith and justice toward all nations. Cultivate peace and harmony with all. Religion and morality enjoin this conduct; and can it be that good policy does not equally enjoin it? It will be worthy of a free, enlightened, and, at no distant period, a great nation to give to mankind the magnanimous and too novel example of a people always guided by an exalted justice and benevolence.
—George Washington.

Whenever we see the doctrine of peace embraced by a nation, we may be assured it will not be one that invites injury; but one, on the contrary, which has a friend in the bottom of the heart of every man, even of the violent and the base; one against which no weapon can prosper; one which is looked upon as the asylum of the human race and has the blessings of mankind. —Ralph Waldo Emerson.

Peace has been our principle, peace is our interest, and peace has saved to the world this only plant of free and rational government now existing in it. * * * However, therefore, we may have been reproached for pursuing our Quaker system, time will affix the stamp of wisdom on it, and the happiness and prosperity of our citizens will attest its merit. And this, I believe, is the only legitimate object of government, and the first duty of governors, and not the slaughter of men and devastation of the countries placed under their care, in pursuit of a fantastic honor, unallied to virtue or happiness. —Thomas Jefferson.

We hear much of the necessity of an elaborate system of fortification to protect our seaports from assault. I am confident that our strongest, most effective, most trustworthy, and infinitely the cheapest coast defense will consist in Fort Justice, Fort Good Sense, Fort Self-respect, Fort Good Will, and, if international differences really do arise, Fort Arbitration. —Carl Schurz.

The most dishonored word in the English language is honor. Fifty or sixty years ago honor would have required you to march as Hamilton did to meet Aaron Burr. To-day the gentleman belonging to the race that speaks the English tongue would be degraded if he fought a duel. Honor has changed. So with nations. As long as the Republic herself acts honorably she remains stainless. Who abolished the duel? Our English-speaking race. Let us now take the next step forward and abolish international duels; let us have the Nation's differences settled by the supreme court of humanity. —Andrew Carnegie.

War has had some benefits at times in teaching courage, humanity, honor. God maketh even the wrath of men to praise Him. But the cost of such teaching is too tremendous. The time will come when war will seem unthinkable. The controversies of peace, the bloodless struggles to maintain personal standards and to maintain truth and right and justice in social and industrial life—these are better than all the historic battle fields of the world. —Judge Hughes.

How little do many of the popular histories record but the destruction of human life and the misguided energies of men, which have hitherto almost baffled the beneficent intentions of nature for human happiness. Descriptions of battles, sackings of cities, and the captivity of nations follow each other in an endless succession. The reader sees rulers and legislators engaged not in devising comprehensive plans for universal welfare, but in levying and equipping armies and navies, and extorting taxes to maintain them. Rarely do these records administer any antidote against the inhumanity of the spirit they instil. They exhibit the triumphal return of warriors, to be crowned with honors worthy of a god, while they take the mind wholly away from the carnage of the battle field from desolate provinces, and a mourning people. It is as though children should be taken to behold from afar the light of a city on fire, and directed to admire the splendor of the conflagration, without a thought of the tumult and terror and death reigning beneath it. Indeed, if the past history of our race is to be much read by children, it should be rewritten; and while it records those events which have contravened all the principles of social policy and violated all the laws of morality and religion, there should be some recognition of the great truth that, among nations as among individuals, the highest welfare of all can only be effected by securing the welfare of each. —Horace Mann.

There is nothing good or glorious which war has brought forth in human nature which peace may not produce more richly and more permanently. When we cease to think of peace as the negative of war, and think of war as the negative of peace, making war and not peace the exception and interruption of human life, making peace and not war the type and glory of existence, then shall shine forth the higher soldiership of the higher battles. Then the first military spirit and its works shall seem to be but crude struggles after, and rehearsals for, that higher fight, the fight after the eternal facts and their obedience, the fight against the perpetually intrusive lie, which is the richer glory of the riper man. The facts of government, the facts of commerce, the facts of society, the facts of history, the facts of man, the facts of God, in these, in the perception of their glory, in the obedience to their compulsion, shall be the possibility and promise of the soldier statesman, the soldier scientist, the soldier philanthropist, the soldier priest, the soldier man. "The sword is beaten into the plowshare, the spear into the pruning hook." "The war drum throbs no longer, and the battle flags are furled." But it is not that the power of fight has perished; it is that the battle has gone up onto higher ground and into higher light. The battle is above the clouds. —Phillips Brooks.

The chief causes of war to-day are insult, contemptuous treatment, bad manners, arrogant and provincial assertion of superiority on the part of the people of one nation toward those of another. * * * When public opinion has risen to such height all over the world that the peoples of every country treat the peoples of every other country with the human kindness that binds home communities together, you will see an end of war—and not until then. —ELIHU ROOT.

In all the history of our Republic we have lost less than 15,000 men by foreign bullets. We have no enemies and began every foreign war ourselves. Every year 600,000 Americans—40 per cent of all on the death list—die needlessly from preventable causes. These precious lives, many of them of breadwinners, take in money value alone $1,000,000,000 every year from our Nation's income. These 600,000 lives are lost by tuberculosis (130,000); by typhoid (over 30,000); by violent deaths—homicide, suicide, preventable accidents (over 100,000); by starvation, exposure, poisonous milk, foul air, congestion, and other evils which moneyand fore sight could have prevented. The last new battleship costs as much as all that is annually spent by cities, States, and Nation to remove the great white plague.

—LUCIA AMES MEAD.

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REPORT OF THE COMMITTEE OF THE NATIONAL COUNCIL OF EDUCATION

ON

Standards and Tests for Measuring the Efficiency of Schools or Systems of Schools

PRESENTED BY THE CHAIRMAN OF THE COMMITTEE

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STANDARDS AND TESTS FOR MEASURING THE EFFICIENCY OF SCHOOLS OR SYSTEMS OF SCHOOLS.

Educators and laymen have always expressed opinions with respect to the efficiency of our schools. In recent years there has been developed, along with a refinement in the technique of investigation in education, a remarkable public interest in the attempts to evaluate our educational practice. School inquiries, investigations, or surveys have been conducted, or are planned, in a great many cities throughout the United States. In each case there is the supposition that such an inquiry or investigation will measure the efficiency of the schools. It has not always been clear, either to those making the survey, or to those who read the reports, that three distinct types of measurement have been employed, or three sets of standards or tests applied. It is possible to characterize each investigation, or each part of some of the larger surveys, by one of the three following methods of measurement—first, measurement by personal opinion; second, measurement by comparison; or third, measurement by more or less well-established standards or units.

Measurement by personal opinion is valuable in just the degree in which the person passing the judgment is, by training and experience, qualified to give an intelligent opinion. Such personal judgments have frequently suggested comparisons with other communities, and have at times, no doubt, been based upon more or less well-established standards. The chief characteristic of this type of report, however, is found in the fact that the author does not feel that it is necessary either to appeal to a painstaking comparison with other similar situations or to state the standards which he uses in passing his judgment. Often the individual who is expressing a personal opinion seeks to give dignity to his statements by saying that he speaks in terms of facts. In effect, his argument is that the situation as he sees it, and as he has described it, leads inevitably to a conclusion with respect to the strength or weakness of the school system that has come under his observation. Of course, no such appeal to facts can modify the situation. Unless careful comparisons have been instituted, or commonly accepted standards applied in passing the judgment, the opinion expressed in the light of the so-called facts which have been discovered remains simply an opinion.

Measurement by comparison is based upon the fundamental idea that the common practice is the result of the judgment of many men who have attempted to solve the same or very similar problems. In reports which have used the method of measurement by comparison, the most common practice is used as the standard to which each local situation is referred. Such comparisons have been made with regard to expenditures, the progress and classification of children through the grades of the school system, the amount of time devoted to school subjects, supervisory provision, teacher training, tenure, and the like. In the derivation of standards of efficiency, it will always be necessary to employ the comparative method. Any adequate derivation of standards will, however, involve much more than comparison. Measurement in any field is not successful merely because we are able to say that one quantity is more or less than another. It is only when we have a measuring stick which enables us to describe all of the quantities with which we deal in terms of definitely determined units that we can claim to have any adequate method of measurement.

We are only beginning to have measurement undertaken in terms of standards or units which are, or which may become, commonly recognized. Such standards will undoubtedly be developed by means of applying scientifically derived scales of measurement to many systems of schools. From such measurements it will be possible to describe accurately the accomplishment of children and to derive a series of standards which will be applicable to varying groups of children and to different social demands.

Standards of accomplishment will always be stated in terms of group measurements. For example, we will not demand that all children in a given grade be able to write with a certain speed and with a certain degree of excellence, nor that they all be able to perform a certain number of operations in arithmetic with a fixed speed. We shall, rather, measure the abilities of the group in terms of a central tendency, possibly the median or mode, and in terms of variability from this most common or median ability. The derivation of standards, and their application to school situations, does not mean that we shall attempt to make all children alike, or to secure the same product in every situation. It will be possible, however, for one who has some appreciation of statistical method to compare groups of children, either within the same school system or in separate systems of schools, with respect to any ability or quality which they may possess with even greater assurance than we have any right to have in comparing two individuals.

We may expect to develop standards or tests of efficiency in the several different fields, or with respect to the several different elements which constitute a school system. It will not be wise to

attempt to measure one element in the situation out of relation to others, since each part of a school system is not only related to but in some measure determines the efficiency of every other part. For example, we might consider the problems of business administration as distinct, and yet we know that successful business administration will determine in no small degree the efficiency of work done in classrooms. It is only when buildings are properly constructed, lighted, and ventilated, when supplies of the right sort are purchased and properly distributed, that we can expect to do satisfactory work. In like manner, the accomplishment of groups of children in the several subjects which we teach, and the number of promotions or nonpromotions, may be determined in considerable measure by the enforcement of the compulsory-education law. In any attempt to measure the efficiency of a system of schools it will therefore be necessary to include in such a survey all of the problems commonly considered under the head of business administration, educational organization, the recruiting of the teaching corps, and the accomplishment of children. It is not probable that it will ever be possible to establish a single standard or unit of measurement the application of which may be thought to determine the efficiency of a school system.

The business management of a system of schools is to be judged by the adequacy of the system of accounting and of reporting which is used, just to the degree that such records are a measure of business efficiency in other lines of human endeavor. In so far as we have commonly accepted standards for school buildings, one may judge of the efficiency of the school plant. Efficiency may further be determined by the degree to which the business management has succeeded in standardizing supplies and equipment to the end that waste is eliminated. It can not be too strongly urged that neither expenditure per unit of population nor expenditure per pupil measures the efficiency of a school system. The question is always not the amount spent, but the return secured for the money expended. The development of standards in business administration will be made possible when we have more adequate reporting in this field. Any comparative study which might lead to the development of standards of efficiency can be made only upon the basis of a large degree of uniformity in accounting and in reporting fiscal statistics.

From the standpoint of the enforcement of compulsory education, which is in effect putting children in touch with the education which we provide for them, the efficiency of a system of public education is measured by the ratio of the number of children in school to the number of children in the community who ought legally to be in attendance. If legal restrictions, control by agencies outside of the school system, or the lack of funds render impossible the enforcement of the compulsory education law, one can not charge that those who are

responsible for the administration of public education are inefficient. It is not probable that any city of considerable size can hope for efficiency in this respect without the establishment of a continuing permanent census.

Efficiency in school organization demands that children be differentiated with respect to their mental, physical, and moral capacities. It is relatively simple by physical examination to determine the need for classes for the tubercular, the blind, the deaf, and the crippled. The fact that special types of education must be provided for these several groups is easily established. It is not quite so simple to determine the adequacy of the means or methods employed in the classes in which these children are found. We may, however, expect in the light of further experience with classes for these children to develop standards as adequate as those which we apply to groups of normal children.

Children who are mentally defective can be discovered by tests which are more or less commonly accepted. The Binet-Simon tests are being applied throughout the United States for this purpose. It is probably not more difficult to discover children of superior ability, and it would seem just as legitimate to judge of the efficiency with respect to school organization of a school system in terms of the provision made for supernormal children as in terms of special classes for defectives.

Moral delinquency demands special treatment. We judge the efficiency of the organization of a school system not infrequently by the provision which is made for those who are habitually truant or who are incorrigible. We should more frequently judge of the efficiency of schools which attempt to reform the morally delinquent in terms of the later activities of the individuals placed in these special schools. We may claim to have reformed a boy or girl only when we know, because of our careful system of following up these special cases, that they do not revert to those practices which we originally sought to eliminate.

We are coming to recognize the need for a differentiated curriculum for children who have finished their elementary school course. It is not easy in the newer types of industrial, household arts, agricultural, or trade education, to determine the needs of the community nor the special aptitudes of children. Any adequate solution of the problem of vocational training will necessitate careful vocational surveys and the largest possible opportunity for the discovery of the special abilities of children. It is interesting to note that many of those who are studying the problem of vocational guidance are coming to speak more in terms of the discovery of special ability in order that adequate training may be given than in terms of places for children to work

One of the most common tests which has been applied to school systems during recent years is found in the percentages of retardation, elimination, promotion, and nonpromotion. These statistics do not, either singly or taken all together, measure the efficiency of the school system. They are rather symptomatic. A large degree of elimination or retardation is significant mainly in showing the need for changes in curricula or in school organization, in calling attention to a lax enforcement of the compulsory education law, or in showing the need for modifications in standards employed by the school system. We shall, of course, continue to follow closely the statistics of elimination, retardation, acceleration, and promotion. Every competent administrator will introduce cumulative record cards which will enable him to trace accurately the history of ail children throughout their school course. Such information wili always be valuable, even indispensable, to one who would study carefully a school situation. We shall have gained greatly, however, when we learn to consider these facts as symptoms rather than as final measures of efficiency.

It has been suggested that the efficiency of schools be measured in terms of medical inspection, dental inspection and treatment, the provision for playgrounds and recreation, the satisfaction of children's needs in terms of meals and clothing, and the provision for the education of youth and adults. It is unfair to judge a school system as efficient or inefficient in terms of any one of these activities, except as the community concerned has recognized these activities as belonging to the school. If the social group has determined that these functions shall be added to those commonly belonging to the school as an institution, then it will be possible to measure the efficiency of each of these lines of endeavor by standards which we may hope to derive.

Considerable progress has been made in recent years in measuring the accomplishment of children in the subjects which are taught in our schools. The problem here is to come to recognize the necessity for group measurements and group standards. Such measurements will involve the idea of progressive increase in achievement and of central tendencies and variability within the group. Often such tests of efficiency will be most significant in comparing the units of a single school system. The work of Stone and Curtis in arithmetic, the scales for measuring the quality of merit in handwriting by Thorndike and Ayres, and the scale for measuring English composition by Hillegas, are especially noteworthy.

Possibly the most satisfactory method of measuring the efficiency of a teacher is to be found in the evaluation of her work as indicated by the growth and development of the children with whom she comes in contact. Such a method of measurement would be open to

the objection that groups of children differ greatly in capacity, and that therefore the achievements of several different groups of children during any given period would not, after all, measure the ability of the teachers who taught them. Administrative and supervisory officers constantly pass judgment upon the work of teachers and rate them without any such painstaking method as has been suggested. Any adequate scheme of measuring the efficiency of teachers must take into account those qualities which make for success, and must allow weight to each of these several qualities in proportion to their importance. Such a schedule has been prepared by Prof. E. C. Elliott, and is issued by the State Department of Education at Madison, Wis., as an "outline of a tentative scheme for the measurement of teaching efficiency."

The more we attempt to establish standards and tests the more insistent we will have to be that our practice be carefully described in the records which are made by teachers and supervisory officers. Such material will be most significant for school systems which have organized as a part of their administrative system a bureau of investigation. Indeed, the administrative or supervisory officer of the future may be expected to act largely in terms of measurements which enable him to judge accurately of the efficiency of any element or part of the school system of which he has charge. We may expect that a group of capable investigators will work under the direction of the superintendent of schools to the end that he and the community which he serves may have constantly available the most adequate information possible with respect to the efficiency of the school system.

It may not be claimed that the measurement of the several parts or elements of a school system necessarily indicates the efficiency of those charged with the administration of our schools. It may be that a school system is inefficient because a community is relatively poor, or unusually lacking in progressive leadership. Unusual facilities for the development of a most excellent system of schools may be provided by virtue of the superior intelligence and the large resources of the population of another school unit. The most significant measure of efficiency is progressive development or improvement within the system of schools measured.

Greater progress will be made in the establishment of standards and tests, and in the development of more adequate measurements of the efficiency of school systems, when we establish a committee, a board, or commission on school efficiency. It is of the utmost importance that this committee or board be representative of the most significant scholarship and of the best administrative practice known to our profession. This body should be constituted by the National Council of Education. Its functions should be as follows:

1. It should offer encouragement, expert advice, and opportunity for publication to those engaged in scientific work in the direction of the derivation of scales of measurement, in the application of such scales or units to actual school situations, or in the establishment in any other manner of standards in relation to public education.

2. It should offer expert advice with respect to the nature and scope of surveys, investigations, or inquiries to be undertaken in any part of the United States.

3. It should offer to members of our profession engaged in administrative work the opportunity to secure a scientific investigation of their systems of schools under the direction of professional experts. As the situation is at present, we have the anomaly which permits a politician, an interested book-publishing company, or a personal enemy of the chief administrative officer of a school system to attempt to secure the removal of such an officer without any adequate measure of the efficiency of the school system or the accomplishment of the man whose work is called in question. The establishment of a body of professional experts would in time render such action impossible.

For the work of a committee or board such as is contemplated in the statements made above, a liberal appropriation should be made by the National Education Association, and it is possible that further endowment should be sought in order to make possible those activities which will mean the increase in efficiency of our system of public education and the establishment of our profession.

There is appended a bibliography of 339 titles pertinent to the subject of which the report of the committee treats. This bibliography was prepared for the committee by Dr. I. L. Kandel.

G. D. Strayer, *Chairman.*
Wm. H. Maxwell,
E. C. Elliott,
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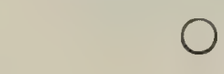

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AGRICULTURAL INSTRUCTION IN SECONDARY SCHOOLS

PAPERS READ AT THE THIRD ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF AGRICULTURAL TEACHING ✻ ✻ ✻ ✻ ATLANTA, GA., NOVEMBER 12, 1912

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., March 21, 1913.

SIR: Interest in agricultural education continues to increase. The attempt to teach agriculture is no longer confined to the agricultural college and special agricultural school. In all parts of the country the attempt is made with more or less success in public high schools and to some extent in the elementary schools. Methods of teaching the important facts and the elementary principles of agriculture are discussed in the meetings of most of our educational associations. There is a large demand from teachers and school officers for any printed matter on this subject that will help them in determining what to teach, and how to teach it, and how to organize schools and adjust courses of study so as to get the best results from the new studies without losing the best in the old. There is also an earnest demand for helpful advice in regard to the preparation of teachers of agriculture in schools of a grade lower than that of the college. The papers read before the American Association for the Advancement of Agricultural Teaching at its meeting in Atlanta, Ga., November 12, 1912, contained much valuable material for those interested in this subject. For this reason they are submitted herewith for publication as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

AGRICULTURAL INSTRUCTION IN SECONDARY SCHOOLS.

I. THE OPPORTUNITY AND RESPONSIBILITY FOR THE PREPARATION OF TEACHERS OF AGRICULTURE.

(a) BY AGRICULTURAL COLLEGES IN THEIR REGULAR COURSES AND CLASSES.

H. L. Russell, University of Wisconsin.

The primary question is, What should be the preparation which is given teachers who are going to present the subject of agriculture in the public-school system?

There are three points, in my judgment, which should be emphasized in connection with this matter:

(1) The acquisition of the subject matter by the student.

(2) The mode of imparting the information necessary in connection with the course.

(3) The desirability of having the student consciously choose his course sufficiently early, so as to perfect his training for teaching work.

Relative to the acquisition of the subject matter, in my judgment this work can better be performed in the regular courses of an agricultural college than is possible in special courses designed exclusively for students of this class.

Successful teaching of agriculture requires thorough knowledge, not only of the practical side, but of the fundamental and theoretical aspects which underlie the subject. These are the same, whether a student is going to teach the subject or practice. The student who is to become a teacher of medicine must carry on the dissection work, laboratory work, or other class work in a manner comparable to that which would obtain if he was to become a practitioner of medicine. It would be an unnecessary waste of resources to duplicate the courses which are designed to present the subject matter so that the same may be most readily and perfectly acquired by the student.

With reference to the second topic, the mode of imparting the information which has been derived from the first group of courses constitutes the pedagogics of the subject, and should be specifically taught to the student in a professional course on teaching. It is in this realm that the main work of the department of agricultural education should be developed. There are good and bad ways in which

teaching may be carried on, and it is quite as important for the student to know from direct experience some of the poor and undesirable methods in which the subject may be presented as to know the most approved standards for imparting such information. Naturally, this work is of a technical character and constitutes the professional part of the training of the teacher; consequently, such courses must of necessity be organized on a separate basis from the regular classes of the institution.

If the profession of teaching is going to be anything more than a makeshift, or a stepping stone to some other vocation, it is manifestly desirable that the student consciously choose his course sufficiently early, so that he may perfect his training in this direction so far as it may be desirable for him so to do.

The time is perhaps already here in which we should formulate a more or less definite course of study designed to train the student in this direction. No field in agricultural development is going to offer a wider opportunity than that which just now obtains with reference to the training of teachers, and it is highly desirable that students entering this avenue of activity should consciously prepare for this work as far as possible. To do this, a student should secure a broad foundation rather than specialize in any one phase of agricultural development.

The great majority of our agricultural students in the upper years of their course specialize in live stock, agronomy, horticulture, etc., throwing the major part of their energies into the prosecution of work in their chosen line, together with cognate subjects.

With reference to the student who contemplates entering the profession of teaching, this course may perhaps not be the most advisable for him to follow. It is desirable for him to get a general working knowledge of the various phases of agricultural development. If he is required to elect a major line, this could well be taken in the pedagogical aspect of the subject in which his course in agricultural education could be correlated with those in the general field of education, leaving a considerable time of his course open in which he can pursue the general informative courses in agriculture, together with the fundamental sciences on which agricultural knowledge is based.

(*b*) BY AGRICULTURAL COLLEGES IN SPECIAL COURSES AND CLASSES ORGANIZED FOR THIS WORK.

KENYON L. BUTTERFIELD, Amherst, Mass.

I assume that the agricultural colleges will be called upon to prepare teachers of agriculture for agricultural departments of high schools, to prepare principals and teachers of agriculture in agricultural high schools, teachers of agriculture in normal schools, and members

of the faculty of agricultural colleges. This list excludes the public-school teachers who give school garden work or elementary agriculture, and whose training ordinarily would be received at the normal schools.

As a rule it is desirable that teachers of agriculture should be prepared through regular college courses and classes at the agricultural college. In other words, it is to be hoped that such teachers will have taken a full college course in agriculture in special preparation for the teaching of the subject. But for a long time to come it will be necessary to supplement this training by special courses and classes. These special courses will accommodate teachers already in service. To some degree, teachers of elementary agriculture and school garden work will find special courses at the agricultural college of the greatest service. Teachers of science in public schools, teachers of agriculture in public high schools, the younger teachers in agricultural schools, and frequently some of the younger teachers in our agricultural colleges will find it desirable, and even necessary, to spend some time at the agricultural college in supplementary work along agricultural lines.

In general there are three types of work to be offered by the agricultural colleges in special courses and classes:

1. Courses in technical agriculture. I am inclined to think that for this special work all of the groups mentioned will desire to pursue technical work rather than to study teaching methods. If a teacher has had a fair normal training, the particular gain of coming to an agricultural college for a special course is to get into the agricultural atmosphere and to sit under the instruction of experts in scientific and practical agriculture.

2. However, this study of agriculture should be supplemented by practical fieldwork, which is designed to teach the use of land and the handling of stock, as, for example, poultry or bees. In other words, these teachers want to come into very close touch with the problem of manipulation of material. In a certain sense this is a study of teaching methods, but it is a method of teaching that is vital and not formal.

3. The problems of community building are also important, because all of these groups of teachers, especially those employed in agricultural departments of high schools and in agricultural high schools, should be real community leaders and should attempt to relate the school in the most vital way to the problems of the community, both industrial and social. Now, some study of the economic and social phases of rural life is important.

These three groups of work are, in my judgment, most likely to meet the needs of teachers of agriculture already in service who come to an agricultural college for supplementary work.

The organization of courses depends entirely upon the classes of people who come for the work and upon the facilities of the institution. In general there would be three groups:

1. A one-year special course in which the regular courses are used to a certain extent, but in which the subjects are so organized that the course takes on all the characteristics of a special course. This course will fit the needs of normal-school graduates who have had very little agriculture and the teachers of agriculture in high schools whose training has been largely in the sciences rather than in agriculture. Undoubtedly also there will soon be need of offering a year of graduate study in professional agricultural teaching work, even for graduates of agricultural colleges who desire to continue in the teaching profession.

2. Doubtless for some time to come the main reliance in special courses and classes will be the summer school of agriculture. Practically all of our agricultural colleges have such a school, and it is here that the larger number of students will resort.

3. It is possible that correspondence courses in agriculture and in agricultural education may be found useful for teachers in service who wish to supplement summer school with continued reading and study throughout the year.

There is another sense in which the word "special" may be applied in this discussion; Dean Russell suggested the question: Is it desirable to organize special courses for the regular students of agricultural education who follow a four-year course? Undoubtedly we must face this question at our agricultural colleges. Some of our teachers of agricultural pedagogy hold that existing college courses in science—say, in chemistry, for example—do not meet the need of the prospective teacher who must handle chemistry as a subject for the pupil in the agricultural high school in an entirely different way from its conventional method of presentation to the college student. The conventional college method is that of analysis, and the teaching is logical and formal. The method by which the adolescent learns is concrete and objective. Now, our problem is: Shall we organize within the college special courses in chemistry or in biology which bring the material of the subject together in this concrete and objective way, in order that the prospective teacher may the better learn how to present this subject when he comes to teach in the agricultural high school? Personally I think we must go very slowly at this point, not only because of legitimate questions concerning the method, but also because of administrative difficulties, such as the fact that only a small proportion of prospective teachers of agriculture are firm in their vocational intent during the early years of their college course when they must study the sciences, and also because of the large expense

involved in organizing separate courses. At the same time, we can not ignore the question.

It is evident that while we should lay special stress upon the preparation of teachers of agriculture through regular college courses and classes, we must for a long time to come, perhaps indefinitely, make provision for special courses and classes in order that the teachers already in service may gain the benefits that come from residence at the agricultural college.

II. THE FIRST YEAR'S WORK IN AGRICULTURE IN THE HIGH SCHOOL.

W. G. Hummel, Berkeley, Cal.

That wise selection and proper presentation of the agricultural work of the first high-school year is of supreme importance is unquestioned. On this depends the success of the work which is to follow. Though elementary, the work must be scientific and thorough in its presentation of selected topics. It must include instruction in the fundamental principles of agriculture and must emphasize the scientific basis of the industry. It must be both practical agriculture and sound science. In addition, the materials of the course should be so selected and organized as to present, as a whole, a well-balanced unit of agricultural study.

Present conditions as to the teaching of first-year agriculture in the high school can hardly be called satisfactory. Some excellent courses are being given, it is true, but there are more poor ones. Even where courses are good in themselves, they are frequently quite unlike first-year courses in any other high school. This in turn necessitates differences in the agricultural courses of later years, and makes difficult the transfer of credits for students from the agricultural department of one school to that of another. It also tends to delay the giving of just university credit for high-school work in agriculture.

Of the many poor first-year agricultural courses now being given, some are due to the fact that so many unexpert teachers, though perhaps well informed agriculturally and scientifically, lose sight of the great purpose of the beginning course and the psychologic and other reasons which should determine its materials and methods. Looking only to names, they choose from the multitude of names applied to first-year work that which appeals to them most, such as farm crops, soils, etc., and start a course under that name. And though excellent beginning courses are being given in many parts of the country under such names, yet in the hands of teachers copying the name rather than the materials, such a course frequently becomes too highly specialized for a beginning course and fails to lay the desired foundation for the work of later years. Or, going to the other extreme, teachers

sometimes give preparatory courses so general that they take up animal life, plant life, farm mechanics, and farm management, thus including so much that the course fails to teach any one thing well. It fails to fix important basic principles and degenerates to a mere collection of agricultural facts, the scientific foundation and principles of which are little understood.

It is evident, then, that we need better agricultural courses in the first year of the high school. We need a more careful outlining of the work. We need greater uniformity in the content and nomenclature of the work as given in different schools. We need a better balance between first-year instruction in practical agriculture and in the basic scientific facts on which agriculture rests.

Before attempting to say how this is to be secured, let us review briefly the science situation in the high school, since successful agricultural instruction is so closely related to it.

That the teaching of the physical and the biological sciences in the high school has been unsatisfactory in many ways has been admitted for years. The educational results of high-school science are neither all that was hoped or predicted when it was introduced into the high-school curriculum. In many schools the number of students electing such work is falling off. The materials used are criticized as not sufficiently related to the life and needs of students. The results attained are said to be too often unsatisfactory both as to the knowledge gained by the student and in the acquiring of a proper attitude toward scientific work.

Many remedies have been proposed, such as a rearrangement of the science courses, more careful selection of the first-year science subjects, the introduction of many applications of science in instruction, and so on. The science work has undoubtedly been improved by the adoption of these suggestions, but observation and experience show that they have not brought about all the improvement desired. Even when the science work is carefully arranged and many of its applications introduced, it too frequently fails to hold the attention of pupils and to secure the educational results desired. With first-year pupils especially, the science work has failed to prove attractive or beneficial.

The reason most commonly given for this is that, though for the fullest understanding of any one science there must be an accompanying knowledge of other sciences, yet in the high school the sciences have all been pigeonholed in various semesters or years and unrelated to each other. It is also recognized that another thing prejudicial to the full success of science teaching in the high school lies in the fact that the first-year pupil lacks sufficient apperceptive basis for any special course dealing with the theories and problems of pure science. He is, therefore, apt to be repelled by such work. Even when the first-

year work includes many applications of the science studied to every-day life, it is apt to prove unattractive, for the pupil lacks sufficient information to fully appreciate or understand many of these applications until he has had something of other sciences. Yet the teacher can not take time, in a special science course, such as botany, for example—crowded with materials to be gone over in a limited time—to introduce and demonstrate and explain chemical and other facts which the pupil needs to know in order to understand fully certain applications of botanical facts. Moreover, first-year students are naturally what we may call superficial. Their interests spread over a large area, but do not go very deeply. They are interested in the many wonderful and fascinating things in the world about them and wish to understand them. They like to experiment, to see demonstrations. They like studies related to life. But work limited to a single special science, and but vaguely related to life, does not appeal to them.

It seems, then, that no one of the special high-school sciences proves attractive to first-year pupils or gives them a view of as broad a field as is desirable. No one subject alone, experience indicates, so stimulates interest and engages attention as would a wise selection from the whole field of scientific knowledge.

The suggestion was therefore made by schoolmen interested in the improvement of the high-school science work, as long as a decade ago, that the first-year science work might well be a general introduction to science, having its roots in all the high-school sciences. It could thus, it was argued, be given variety and made full of demonstrations and laboratory experiments which would appeal to the interest, arouse the enthusiasm, and increase the desire of the student for more and deeper knowledge. A background would thus be given for the different scientific studies; they could be related to the pupil's environment and to each other; and students would be prepared for the more formal and specialized study of the various branches of high-school science in the following year.

Many other excellent arguments were also given for the general-science course for the first high-school year. Schoolmen quickly recognized the justice of the arguments, and general-science courses were introduced in many localities. But though the purpose of the courses was admirable, and the advantages apparent, it was found that there was danger of giving disconnected lessons, and, unless the teacher was a particularly strong one, of not getting the desired results.

The work was found to have a tendency to be unbalanced, disconnected, and too much influenced by the teacher's special science interests. Even in the general-science course there was found to be not enough emphasis of the openness of the world of science. There

was need of a connecting thread which should give greater unity and balance and purpose to the work in the minds of both teacher and students.

A few agriculturists and science men then began to feel that the solution of both the agricultural and the science problems of the first high-school year lies in the agricultural general-science course. This was suggested as early as September, 1910, in an editorial in the Experiment Station Record.

By this combination of work the usefulness of scientific knowledge is emphasized. Such a course not only presents and teaches certain scientific facts, but it provides values for them. It gives an economic, as well as a cultural, motive for further scientific study. It relates the scientific facts taught to the life of man, to certain of his fundamental needs, and to the problems of a basic industry. The agricultural work furnishes a core about which are grouped in a vital way the fundamental conceptions of elementary general science. By the agricultural work the facts of general science are related and the course is given balance and purpose.

With regard to agriculture, a combination of agricultural and general-science work promises an equally good effect. The science work explains and dignifies the agricultural work. It early gives some familiarity with scientific methods and emphasizes the importance of investigational work and evidence.

Where a four-year agricultural course is given in the high school the pupil must in some way get considerable information concerning the elements of various sciences during the first high-school year. Special separate courses in different sciences during the first year will not serve the purpose, for he has not enough time to take several of them. He must either get them in a beginning agricultural class or in a general-science course. Why not combine the two? is a natural question. If a good beginning agriculture course can be arranged which is at the same time a good general-science course, the advantages are apparent.

Finally, it is rightly argued that for such students as do not go on with either agricultural or pure science studies, such a course serves as a valuable culture course. So much of agriculture as is embraced in this first-year course is needed by every boy and girl as a matter of general intelligence, information, and culture. Whatever their station in life and whatever their occupation, they should know at least this much as to the fundamental industry through which the materials of their daily food supply are produced. The agricultural general-science course gives an opportunity for the large number of students who do not go beyond the first year or so of the high school to get at least a glimpse into the great field of science and an introduction to its methods. To those students who do go on through the

high school, and perhaps to college, but who are specializing in the classics, or modern languages, or some subject other than science, it gives a survey of the elementary facts of several sciences, instead of limiting them to a scant semester or two of a single science.

Thus, it is argued, by using an agricultural general-science course we not only serve the educational purposes of first-year agriculture and first-year science to the best advantage, but we economize time, money, and effort. The same beginning course may be given to all first-year students, whatever studies they are to take later. Economy of time, materials, and teaching energy thus accompanies the most satisfactory form of instruction.

Such is the theory. And it is a reasonable one. But in actual practice, where agricultural general-science courses have been tried, some have been very unsatisfactory.

This has in most cases been due to no fault in the agricultural general-science idea, but in the way it has been worked out. Agriculture and general science have been combined, but with a poorly prepared outline. The agricultural basis for the work has itself lacked unity. The agricultural connecting thread has been weak and disconnected. The materials of the course have been too heterogeneous. There has not been a proper balance between the agricultural and the general-science phases of the work.

That an agricultural general-science course which satisfies all the demands of both first-year agriculture and first-year science is possible there is no doubt. That such a course may be so organized and presented that it shall have all the advantages claimed for it, without the weaknesses which have in most cases accompanied it, is equally true.

In California we believe that we have worked out an agricultural general-science course which does give both a suitable foundation for the agricultural work of later years and a proper introduction to the work of the special science courses of the high school.[1] In it, practica agriculture and scientific facts are constantly paralleled and balanced. Elementary facts of every high-school science are taught, and the sciences are constantly related one to the other. The outline of the work is adapted to practically any locality or high school. While definite, it permits great freedom in treatment to suit local conditions.

As a general outline for the work, the secondary agronomy outline given in Office of Experiment Stations Circular 77 has been adopted, but with many modifications. Though the circular recommends that

[1] The course was first worked out by the writer and tested at the Oxnard high school, in 1909–10, a year before the publication of the editorial in the Experiment Station Record on first-year agriculture and general science. During the year 1910–11 it was still further improved, and tested by the writer at the Fresno (Cal.) high school. Since that time a number of California high schools have inaugurated courses modeled along the same lines, with satisfactory results.

the work of this outline be preceded by a botany course, this is neither necessary nor desirable, as it is used in the agricultural general-science work.

The outline was chosen as a basis for the work because it deals largely with plant growth and development. Since the growing of plants is the basis of agriculture, the study of plant life should naturally precede other agricultural study. The materials of first-year agricultural work, whether intended primarily as a foundation for the work which is to follow or merely as a unit of beginning agriculture, should center about the growth and development of plants and the study of their environment.

Even though we assume what is, though desirable, not always the case—that elementary agriculture has been taught in the grades either as agriculture or under the guise of nature study—yet a more thorough, scientific study of plant life and growth should be given during the first year of the high school than is possible in the elementary or grammar grades, with their limited equipment and inexpert instructors. This is desirable not only because of the better equipment available in both the high-school laboratories and library, and the consequent clearer bringing out of the scientific basis of agriculture, but because of the possibility of greater thoroughness, through more frequent and longer recitation periods and the improved grade of instruction possible where the agricultural work is given by a trained scientific agriculturist.

I believe that the first-year work should be limited to plant growth and environment, omitting all animal study, except where directly connected with the plant study, as, for example, some study of insects as repressive agencies and as aids in the fertilization of flowers, study of the earthworm and its work in soil formation, and so on. Only the most cursory attention should be given to farm implements; farm management, general horticulture, etc., must be almost ignored; for by thus limiting the first-year work entirely to the study of plant growth and environment, we are enabled to do more thorough work and to secure a better foundation for later courses.

I do not believe in the scattering of attention and energies so common in first-year work. There is abundant material and enough variety in the study of plants, of how they live and grow, of their struggle for existence, of the effect of the various environmental influences about them upon their development and crop yield, when this is accompanied, as it should be, by abundant field practicums, trips, and the growing of gardens or special crops.

But though the limiting of first-year agricultural work to a study of plant growth, development, and environment seems advisable, yet this does not mean that only purely agricultural and botanical facts shall be taught in the course. An outline for first-year agriculture,

based on plant life, may also furnish an ideal outline for general science work, giving opportunity for the teaching of the elementary facts and principles of geology, physics, chemistry, zoology, entomology, and physiography, as well as of botany, and while connecting and relating these sciences, preserving a suitable balance between them.

To show more clearly how such a first-year agricultural course may be made to serve the purposes indicated, I have prepared for a book now in press [1] an outline showing the arrangement of work as used now in a number of California high schools. This outline is divided into three parts, the first of which shows the modifications made in the agronomy outline in Office of Experiment Stations Circular 77, before mentioned, and, as elaborated, representing the agricultural aspect of the work. According to this outline, the composition of the plant is first taken up, and later, in order, plant structure, physiology, heredity, and environment, including light and heat, air, moisture, the soil, plant food, repressive agencies, etc.—all from the point of view of the agriculturist and practical farmer. The second part of the outline is made up of suggestions as to scientific facts and principles which may be given in connection with the course; that is, it represents the general-science aspect of the course. And the third part consists of suggestions as to experimental work in the laboratory and field, class demonstrations by the instructor, field trips, etc. The modifications in part one, and all of the second and third parts of the outline, were worked out, as has been said, in giving a first-year agricultural course in the high school, and the materials indicated were tested with different classes with very satisfactory results.

The work of each of the three parts of the outline may be compared to a strand of a rope—the three strands joining to form a strong, continuous whole. Each strand gives strength to and derives strength from the others. Each is of equal importance and equal dependence.

That this arrangement of work offers abundant opportunities for the study of plant growth, development, environment, and improvement, from the agricultural viewpoint, has been proved.

A wealth of interesting laboratory and field work is made possible by the topics of the course, and the work is such that it promises both a firm foundation for future work and a sure appeal to students' interests. Though at first thought the outline may seem to begin with topics beyond the ready comprehension of first-year high-school pupils, yet experience has proved that, treated in the right way, the essential facts as to plant composition and structure are readily understood by pupils of this grade. The eagerness and quick understanding which first-year pupils bring to a simple, clear, yet thoroughly scien-

[1] Hummel, W. G., and Hummel, B. R.: Materials and methods in high-school agriculture.

tific treatment of these and other topics, such as organic evolution, the struggle for existence, problems of plant improvement, etc., is most surprising to those who have had no experience in teaching them.

The rich opportunities offered for general science work are also evident. In studying plant composition, physical and chemical changes must be explained; the characteristics of the elements necessary for plants, their occurrence, preparation, properties, and importance should be brought out. The composition of water, its form and physical properties, may be taken up when discussing the water content of plants. The indestructibility of matter, the general topic of combustion, and many other facts of physics and chemistry may also be presented at this time.

In studying plant structure the study of the vegetative and the reproductive organs of the plant, the parts of a flower and the relation of certain insects to fertilization are subjects which crowd to the fore.

Plant physiology brings up the movement of plant juices, the joint action of physical and chemical agents, and a comparison of plant and animal physiology.

In studying plant heredity, organic evolution and the theory of descent may be taken up to any desired extent. The factors in organic evolution, natural selection, artificial selection, isolation, the theories of De Vries, Mendel, etc., offer a wealth of material. And examples of improvement in plants and study of typical illustrations add interest and vitality to it all.

Plant environment brings in a study of heat and light in an elementary way, and perhaps of color as well. The thermometer will also be studied at this time. Moisture as a part of the plant's environment brings up the subject of the mechanics of liquids, capillarity, and surface tension. The air as a part of the environment makes it necessary to study the atmosphere, the mechanics of gases, and the barometer. The study of plant foods introduces the composition of soils, plant food obtained from the air, from soils, and from fertilizers. Soil study, as a part of the study of plant environment, brings up the question of how soils are made, the chemical and physical properties of soils, agricultural geology, the geological study of soils, etc.

The study of the repressive agencies with which plants have to contend develops many scientific facts. Entomology must yield us information concerning the life history of injurious insects, their structure and development, collecting, classifying, etc. Bacteriology gives us information concerning certain plant diseases. It is necessary for organic evolution to explain plant competition and the struggle for existence. Physiography comes forward to explain climate as related to agriculture, the daily weather map, winds, the course of storms, etc. And chemistry must give us tests for soil acids and alkalies, and information as to neutralizing agents.

In giving the course, two full periods per day should be allotted to the work. Yet even with two daily periods it may not be possible to cover as much ground as is desirable. Time may, however, be economized by increasing the number of demonstrations by the instructor or by individual pupils. Yet to secure the best results a generous number of exercises and practicums must of course be performed by each member of the class.

The class time may be divided between laboratory, class, and field work as seems best, though not less than one-third of the time should be given to practicum work of one kind or another. It is recommended that no textbook be required, since none at present available is adapted to the work. Several copies of some of the better high-school manuals should, however, be provided for class use, and the library equipment should include a wide range of agricultural books and bulletins dealing with the topics of the course.

The equipment should include, wherever possible, a greenhouse, or lath house, or both, for plant propagation and certain other work. Many of the materials and some of the apparatus of the biology, botany, chemistry, physics, and other science departments of the high school, together with some special agricultural equipment, as tools for gardening, soil sieves, soil thermometers, and so on, must also be provided. Much use can profitably be made of a lantern in connection with the lecture work, for illustrative purposes, but this is not counted as a part of the special equipment for this course, since it is used quite as much or more for many other high-school courses. Farms, local nurseries, etc., of course furnish much valuable illustrative material, as does also a school agricultural exhibit, after agricultural courses have gotten well under way and collections have been made. Sufficient land for gardens and demonstration plats should also be available in connection with the school. However, by utilizing home plats in individual home project work, the amount of school land necessary may be greatly reduced.

It will obviously be found impossible to treat in much detail the scientific facts and principles brought up in following out the general science aspect of the course, in addition to doing practical agricultural work. Such of them as seem most needed by the class in connection with present or as a preparation for future work should be studied in a thorough, if elementary, way, but the practical agricultural phases of the work and the attendant practicums and laboratory work must overbalance the purely scientific aspect of the work, and the agricultural value of a particular fact or experiment must be the guiding principle in the selection of the materials of the course.

Yet even the treatment of the strictly agricultural topics must necessarily be greatly limited. Only the fundamental principles and basic facts can be taken up under each topic. A general understand-

ing of the processes of plant growth and the conditions of its environment, together with an appreciation of the scientific basis underlying them, some little knowledge of a few special crops, a fair amount of deftness in laboratory and other practical exercises, ready and accurate observations, the formation of right ideas as to agriculture and country life, eagerness for future study of those subjects which help us to understand our environment, and preparation for the special work of science, domestic science, or more advanced agriculture—these such a course does give, and this is as much as should be expected from it.

III. WHAT RELATION SHOULD EXIST BETWEEN THE EXPERIMENT STATIONS AND THE SECONDARY SCHOOLS OF AGRICULTURE?

President A. M. Soule, Athens, Ga.

The primary function of a secondary school is that of teaching. It is the workshop into which the youth from the public school comes to receive, in many instances, all the instruction possible before entering upon the exacting duties of life. Any institution upon which such a grave responsibility rests must ever keep in view the central reason for its existence, and emphasize and elaborate upon its scheme of instruction so as to give it something of cultural value, a broad vocational basis for service, and an adaptability to environmental conditions.

In order that the best teaching may be done, it is necessary from the modern point of view that an exposition of the fundamental principles or theories of a subject be made in the classroom, the applications of the classroom facts illustrated and exemplified in the laboratory, and their utility in practice demonstrated in the field or the workshop. To some this may appear altogether idealistic, yet it is possible for many of our secondary schools to attain this plane of instruction with infinite benefit to themselves and an entire transformation of the viewpoint of the students which they graduate. Any secondary school, therefore, especially where it attempts to emphasize vocational subjects, must have efficient laboratory facilities and equipment and a shop and farm in which to illustrate and bring home in the most emphatic manner possible the final purpose intended to be conveyed by the courses of instruction offered.

Provided the institution has the equipment indicated, it will immediately appear to many that it should take up experimental work. Those who advocate this probably have no very clear conception of what constitutes an experiment, much less an appreciation of what is meant by the word research in the limited application this word

has from the standpoint of the scientist. The facilities indicated above could not be construed as offering an opportunity for carrying on research of a high order or which might be correctly recognized as of an experimental character. While there have been thousands of so-called experiments made in the United States, most of these would probably fall into the class of simple demonstrations or illustrations of principles or facts already known. Research is something exceedingly difficult to define. There are few men capable of organizing and directing it, and those who have achieved the greatest success have been afforded means from State or philanthropic sources which have practically enabled the savant to withdraw himself into a specialized atmosphere and devote his energy to the problem selected for investigation.

At the present time, in my personal judgment, the secondary schools are not prepared and should not undertake experimental or research work. From this it should not be concluded that no effort should be made to develop the minds of the boys and girls and point out to them by demonstrations the possibilities which experimental investigation and research offer the competently trained individual. To this end it would be well for every secondary school to endeavor to carry on a variety of experimental demonstrations. These may properly fall within four classes:

(A) Such simple experiments as are calculated to illustrate the principles of the various courses of instruction. For instance, if a boy be required to test the milk from cows for a sufficient length of time to illustrate the principle of individuality in animals, he will be infinitely more impressed and developed by this experience than through months of classroom instruction alone. Tests of this kind are of the utmost importance to the student, and they should be encouraged as much as possible.

(B) Demonstrations of educational value to the community should be inaugurated. They will of course be useful to the school, for every school, to be successful, must have a clientele of its own, and it should be the object and purpose of its board of trustees and teachers to bring it as intimately in touch with its adult constituency as possible. A good demonstration to organize in a rural community would be one setting forth the effects of seed selection with such crops as corn and cotton. It would cost very little to do some work of this character, and yet its results would be highly beneficial to all the interests concerned.

(C) Every school should attempt to bring new facts to the attention of its student body and its home community. Science is now making such revolutionary progress that the truth of to-day is disproved to-morrow, while new principles of practice as applied to mechanics or agriculture are found out almost daily. The interest

of all is greatly stimulated by constant touch with the leaders in all fields of scientific activity, and therefore what may be termed the extension experiment should be emphasized whenever possible. For instance, a test might be undertaken in a given community to show the importance and economy of applying calcium nitrate as compared with the forms of nitrogen which have previously been used for fertilizing purposes.

(D) Cooperative experimental work with the State experiment station may be carried on in some instances to advantage. This work does not originate in the school, but is intended to show the students and the people of the locality the benefits to be derived from modifying the practices followed in some respects. For instance, in one State with which the writer is acquainted there are a number of secondary schools. These schools are located on land varying widely in type. The State uses considerable quantities of commercial fertilizer. The college of agriculture in this State is engaged in cooperation with other agencies in carrying on a physical-chemical soil survey, so that the deficiencies of these various type soils may be ascertained, supplementary fertilizers required determined with some degree of accuracy, and the best methods of crop rotation calculated to build up these soils established. This is a most important constructive piece of work. Carrying it on in association with these schools is a matter of momentous concern, not only to the boys and girls, but to the people in the counties contiguous to the secondary schools in question. This character of work, from one point of view, may be regarded as of an experimental nature and involving in some respects the principles of a research investigation. Yet in its larger applications it is intensely practical, and the schools in question would in the opinion of the writer be justified in devoting some of their energy and a small amount of their resources to the furtherance of a cooperative project of this character. The difference between this kind of work, however, and the demonstrations referred to above lies in the fact that it has been conceived on a State-wide basis, contains an element of true research, and is presumably directed by men who have opportunities and facilities at their command which a secondary school can hardly hope to enjoy for many years to come. The school of itself could therefore not well undertake work of this character with satisfaction, and yet an investigation of this type is entirely justifiable, though probably constituting quite as elaborate a piece of cooperative work as any secondary school would be justified in undertaking with the experiment station. To impose upon these institutions the duties and responsibilities of a substation would therefore not be desirable, for unless there are two organizations within the institution the chances are that the funds intended for experimental work would be used to promote the ends of instruction departments, or vice versa, depending largely on the capacity and skill of the men

placed at the head of the teaching and experimental departments, respectively.

Those who have had large experience in experiment station work realize how very difficult it is to carry on investigations satisfactorily, except under the most favorable conditions. A large equipment is required to begin with. Men of fine attainment and unusual training must be secured, while a first-class library is absolutely necessary. The experience of experiment station workers in the United States bears out the statement that the greatest success has been attained when work of this character has been associated with great universities or other educational institutions which have a fairly liberal endowment, an abundance of scientific apparatus, and are pervaded by that peculiar atmosphere which scholarly men alone create. To isolate experimental work and workers under conditions where petty jealousies and strife enter into their problems is suicidal. Therefore, at best the secondary school should only act as a coordinating agency with the State experiment station, and it is unreasonable to expect an institution of this kind to organize and promote research of a highly specialized type. As a matter of fact, secondary schools of agriculture should be much more closely correlated with the college of agriculture than the experiment station. Their main function as stated at the outset of this paper is that of teaching, and this must be preserved, if their integrity is to be maintained and they are to serve the purpose for which they were established in a manner satisfactory to all the interests concerned.

From the point of view of the writer, there is an error in the Page Bill as it now stands which should be modified, if this measure is to be given serious consideration in the immediate future. Reference is made to the proposal to establish a substation in connection with every secondary school. Personally, I am not opposed to the secondary schools receiving supplementary appropriations from the Federal Government for the maintenance and more complete organization of their work, but if funds are appropriated to these institutions let it be for demonstrations of the type and character outlined in this paper. Work of this kind can be carried on successfully and with the hope of achieving results of some considerable value to the constituency these schools are intended to serve. Experimental work under the conditions surrounding the average secondary school is not likely to prosper. The enthusiasm of some friends of agricultural education and their lack of acquaintance with the true significance and application of the term experiment are probably accountable for the error in question. As friends of secondary education and as believers in the mission and purpose of the secondary agricultural and vocational school let us not as a body of clear thinking and patriotic citizens ask or expect them to undertake a service for which they are not prepared.

IV. THE USE OF LAND IN CONNECTION WITH AGRICULTURAL TEACHING.

(Report of committee of the American Association for the Advancement of Agricultural Teaching: R. W. Stimson, Boston, Mass., chairman; C. G. Selvig, Crookston, Minn.; G. A. Works, Madison, Wis.; F. R. Crane, St. Paul, Minn.)

DIVISIONS OF THE REPORT.

Upon the suggestion of Prof. K. L. Hatch, president of this association, Mr. C. G. Selvig, of Crookston, Minn., was assigned the portion of this report dealing with the use of land in connection with agricultural teaching at the special secondary agricultural schools; Messrs. Crane and Works were assigned the parts dealing with the use of land in connection with the teaching of agriculture by elementary schools and the colleges; to the chairman of the committee was assigned the part dealing with the use of land by high schools teaching agriculture.

Unfortunately, Mr. Crane changed his field of service and has been unable to give very much attention to the investigation. Moreover, Prof. Works found that his interests lay so largely in other directions that he did not feel like devoting the necessary time and labor to the preparation of his part of the report. The chairman of the committee has, therefore, extended his attention to the use of land in connection with elementary schools. He has not attempted to make an exhaustive survey, but will submit a few significant items of information which were received.

(*a*) IN SPECIAL AGRICULTURAL SCHOOLS.

By C. G. Selvig,
Superintendent of Northwest School of Agriculture and Experiment Station, Crookston, Minn.

This part of the report concerns itself with special schools of agriculture, embracing—

1. Congressional district agricultural schools.
2. County schools of agriculture.
3. State and private agricultural schools with indeterminate territory, including—
   (a) Schools located at the agricultural college.
   (b) Schools located apart from the agricultural college.

These schools differ greatly in their organization, support, the kind of work offered, equipment, and the amount of land used. They have one main aim in general, and that is to teach practical agricultural practices to the young men who enroll. To secure data for this report, an inquiry was sent out to the schools as reported in Circular No. 97 (revised), Office of Experiment Stations. A careful

perusal of bulletins and announcements sent out by these schools and the information given in reply to the inquiry show the greatest diversity in their activities.

One thing may be noted at this time, and that is the great increase in the number of such special schools. The first one is scarcely 25 years old. This is the School of Agriculture at St. Anthony Park, St. Paul, Minn., which was organized in 1888. Nearly all are dormitory schools. The terms vary in length from six months of the year to continuous sessions during the year. Most of the schools have either six months' or nine months' terms. Courses include the general agricultural subjects. The emphasis in instruction is placed upon the practical application of agricultural principles to actual farm practice.

THE AIM IN THE USE OF LAND.

Primarily, the aim of these schools in the use of land is demonstrational, and not experimental. In most cases the land is used as a basis for laboratory work, but the main idea is to have the school farm show what can be done under the conditions prevalent in the part of the State where the school is located. Many of the schools report a limited amount of experimental work in addition to the demonstration work.

The school farms which are located at these institutions vary in size from 3 acres to several hundred acres. In the case of most of the larger farms, the major portion of the land is used for general farming work.

Some of the schools report part-time work on the school farm by the students themselves. This is not, however, generally done at the present time. Most of the labor used on these farms is hired. In many cases the students are hired to do the work, a part of it during the school year, but mostly when there is no school in session.

The replies to the inquiry sent out indicate that there is practically no individual plat work done by the students. In most cases the schools are in session during the winter. In the case of the schools where the term lasts six months, the idea is that the practical work of applying knowledge gained in school shall be done on the home farm of the students.

A more detailed summary of the information gained from the replies to the inquiry and from the bulletins published by these schools is appended as a part of this report. (See Appendix A.)

From this investigation there come certain conclusions as to the use of land in connection with special schools of this kind, based upon the present practices of the schools. It would be exceedingly difficult, if not entirely impossible, to lay down any specific rules that should apply generally. This comes because of the great diversity

in organization, the great difference in support, and in the problems that should be met in the different States and at the various schools. It is also unnecessary that there be any particular uniformity. These special schools have a definite problem to solve. They are so organized that they may adapt themselves to the needs of their particular sections of the country. All this report can attempt to do is to point out what is being done and to present advanced lines of effort that seem feasible and practicable. This part of the report of your committee is made without conference with the other members of the committee, whom it was found impossible to join; so they may be entirely absolved from its deficiencies.

LAND FOR DEMONSTRATION PURPOSES.

Most of these schools have a tract of land large enough to work out and illustrate some system of farming, as well as demonstrate ordinary farm practices. Truck farming, fruit farming, dairy farming, and other types of farming are shown. On these school farms there should be carried out a thoroughgoing farm business in actual practice which would give the boys a thoroughgoing, practical farm training. The land should serve as a model farm for both the boys who attend the school to study and for the farmers who visit the farm to inspect.

A certain minimum of land is demanded for this purpose. Most of the schools have this minimum of land already in use and are using the land in part or as a whole for the purpose mentioned.

COMMERCIAL FARM RECORDS.

The farm should be run on a strictly commercial basis, excepting such plats and parts as are used for experimental purposes. These should be kept separate as far as the accounting system is concerned. It is extremely important that statistics be furnished regarding the cost of all farm operations in each of the different sections in the State. The school of agriculture at Canton, N. Y., is doing this work in an intensely valuable way.

DEMONSTRATION WORK.

On the school farm accepted facts in agricultural practice should be tried out in a demonstrational way. At the Northwest School of Agriculture, at Crookston, Minn., the farm embraces 640 acres of Red River Valley prairie land. About one-tenth of the farm at the present time is used for demonstrational work on plats. While the demonstrations that are being conducted there would not fit in in other localities, the nature of the work done there may be of value

in showing the extent of the work. In Appendix B are projects that other schools are trying. There is some experiment work mixed in with this other work of a demonstrational nature, but, in general, the work is testing under farm conditions the old as well as the new methods promoted by the experiment-station workers.

At Crookston it is sought to build up a body of knowledge gained from these demonstrations which will be of value to the farmers of this section of Minnesota. (See Appendix B.) This knowledge will become also a part of the instruction work in the classrooms of the school. This knowledge and direct personal observation of the farm by the students will enable them to meet successfully the same problems on their home farms. It is a definite function of these special schools to conduct demonstrations that are of the greatest importance to their respective sections.

GENERAL FARM PRACTICE.

At Crookston the remainder of the farm is used to demonstrate on the larger fields that, commercially, crop rotation, the use of pure-bred seed, the proper cultural methods, and other accepted practices, pay. There are on this particular farm also several kinds of drainage; so that problem is being investigated. The production of pure-bred seed and stock are profitable business enterprises. The kind of work may be different in other sections of the country. Aside from the direct demonstrational work for which the land is used, there should be the greatest emphasis placed upon the incidental and often as important work that is made possible through the best possible use of the land. The farm may be the place where the best pure-bred seed for that section is produced. The same may be done in fruit growing, in gardening, and in forestry. Raw material for various feeding combinations for the stock should be grown on the farm and used in feeding the farm herd and poultry. Feeding stock economically is the largest factor in successful farming in most parts of the country. It is the place where farm practices fail oftener than at any other.

PART-TIME WORK.

The students should be required to have part-time work on the school farm. This will give them a closer acquaintance with the demonstration plats, the general farm fields, the farm records, the feeding work of various kinds, the practical use of machinery, and the ordinary farm operations. Of necessity, if the school is in session mostly during the winter season, the work on the school farm will be reduced to a minimum. There is time for some of this work, however, and it should be required.

"SUMMER PRACTICUM" WORK.

These special schools of agriculture do not, as a rule, allow as much time for actual work on the school farm as should be done by the students. Therefore some system whereby the students can carry out selected projects on their home farms is necessary. Several schools are doing work along this line. It is called "summer practicum" work at the Northwest School of Agriculture, Crookston. The inquiry sent out elicited no definite information regarding the nature and scope of this work at other schools. To illustrate what is meant, I take the liberty of describing the summer work at the Crookston school. I believe it is a vital part of the work of this school and will become an invaluable part of the training offered by the special schools. In this way the winter months are spent in getting in touch with the best agricultural methods, while during the time when there are no sessions the most successful farm methods are put into daily use and careful data are taken to be used the following term of school.

In the 1912 bulletin of the Northwest School of Agriculture the following paragraph was included under the title of "Summer practicums":

> Summer practicum work is a part of the regular school course, and must be taken by all C and B boys during the two summers intervening between the freshman and senior years. The work consists of practical work on their home farms in following up studies taken at the school during the winter. The projects selected must be submitted to the superintendent for approval before February 1. Regular reports of the progress of the summer work are required each month. Each student will be visited at least once during the summer by some one connected with the school, who will give suggestions, note progress, and report on the success being attained. Credits in this work are required for graduation from the school.

Early in the spring of 1912 a list of projects was made and minimum requirements governing each was formulated. (See Appendix C.) The first and second year students were given the privilege of selecting one or more of these projects for home work. As the work done in 1912 was the first attempted along that line by this institution, difficulties developed that will have to be remedied. In the first place, a choice of too many projects was offered. It was impossible to have all of the projects on the list of equal importance. Seventy-six projects were selected by 62 boys, more than one each, of 18 different kinds of work. Monthly reports were received from the 62 boys in all the projects where it was necessary to receive monthly reports. In all cases a preliminary and a final report were received. The projects planned were comprehensive enough to discover if the student had acquired a mastery of the principles that underlaid that particular work and knew what was expected of him. The success or the failure of the work depended upon himself alone,

although the projects were under the supervision of the school during the summer season. In this work were united theory, observation, and practice. The summer practicum work also served the very important work of bringing the school and the farmers of various communities together. It served a further purpose of enlarging considerably the areas of land indirectly supervised by the school. The summer practicum work put responsibility upon the individual students which they can not be made to assume in doing part-time work at the school, even if they have individual plats there. Caring for individual plats would not furnish the training in actual management afforded by the home work. When the summer practicum work is more fully developed it should become demonstration work of the best possible kind on actual farms, because from the nature of this work, properly done, it should have a large value in that direction. When the neighbor comes to John's home and sees there the work John is carrying out during the summer as a part of his agricultural school course, he is not only going to watch it closely, but profit by every step that means progress. This work is not the school professor's work, but it is John's work, done under his own intelligent management, because he knows from his school work and from his knowledge of successful farm practice that there is only one way to do that work right.

I regard this summer work as a very important part of the general plan of the use of land in connection with these special schools. It offers an unlimited field of effort along lines that will bring valuable results to the students and the farmers, and will increase the usefulness of the school manyfold.

"POSTGRADUATE PRACTICUM" WORK.

In this connection I wish to mention briefly what will logically follow this summer practicum work. The boys who attend these special schools become actual farmers after leaving school. In Minnesota the graduates of schools of agriculture are counted among the most successful farmers of the State, the leaders in their communities. They can be organized into associations of farmers' clubs, and will continue to try out projects on their farms after they have left school, and report annually at their meetings their experiences, the cultural methods that succeed best, statement of the cost of production, the results with their stock, and so on. These annual meetings held at the school every year would prove to be of the greatest value. This postgraduate practicum work will be a means of carrying out the final step in the training for successful farming begun at the school. The truest justification of these special schools of agriculture comes when these institutions train such rural leaders.

WORK WITH LAND OUTSIDE THE SCHOOL.

Another line of work which special schools of agriculture already have taken up to a large extent, and which must become each year of increasing importance, is their work with actual farmers who are not enrolled in the schools. This will take several directions. It may be in actual work of planning farms, including starting rotations, or in live stock and drainage work, as the need may be. Demonstration plats may be run on the farms by the farmers themselves, using the suggestions of the corps of instructors connected with the agricultural school. These demonstrations will assist in introducing various new crops, in showing what new methods will accomplish, or in keeping a system of farm accounts. This may be considered extension work and be regarded as set apart from the work of the school. To my mind it would be a mistake to regard it in that way. The most vital thing in connection with these special schools of agriculture is that they come into close touch with the actual farmer on his farm and aid him in solving his problems as they arise. Only in this way can they keep close to the farmers themselves. Only in this way can they serve the purposes for which the schools were established.

(*b*) IN HIGH SCHOOLS.

By Rufus W. Stimson,

In charge of Vocational Agricultural Education, Massachusetts Board of Education, Boston, Mass.

MAGNITUDE OF MOVEMENT.

Members of this association are undoubtedly familiar with the publication issued annually in recent years by the United States Department of Agriculture, Office of Experiment Stations, giving the institutions of all grades, both private and public, which are teaching agriculture in the United States. Those present will probably recall the summary given at the last annual convention by Mr. A. C. Monahan, assistant in rural education, the United States Bureau of Education. Mr. Monahan said that figures taken from the reports submitted by schools teaching agriculture showed that the United States then contained more than 100 special agricultural schools of secondary grade, located in 17 different States, by which the schools were supported in whole or in part. In 1910, he said, agriculture was taught as a separate subject in more or less complete courses to more than 37,000 pupils in 1,800 public and 140 private high schools.

AUTHORITIES AND FORM OF INQUIRY.

In seeking information for this report inquiries were addressed to most of the State superintendents of public instruction and presidents or deans of the agricultural colleges. Each was asked to say what high schools, if any, had made the best use of land in connection with the teaching of agriculture during the past season, (1) home farm land, (2) land at the school. With the request for information were sent copies of a sheet giving the organization of this association and its purposes, also a sample of the form of questionnaire (see Appendix E) which was to be sent to the individual instructors in charge of the agricultural teaching in high schools whose names might be given.

STATES REPORTING USE OF LAND.

Twenty-three States have reported the use of land at one or more of their schools. The questionnaire was filled out more or less fully and returned by 22 States. Fifty-six replies, all told, were received, as follows; the number of replies from each State is indicated: California, 1; Illinois, 1; Iowa, 4; Maine, 4; Maryland, 1; Massachusetts [1]; Michigan, 2; Minnesota, 9; Missouri, 1; Nebraska, 1; New Hampshire, 3; New York, 2; North Carolina, 2; North Dakota, 3; Ohio, 9; Pennsylvania, 1; South Carolina, 2; Texas, 2; Vermont, 1; Virginia, 4; Washington, 2; Wisconsin, 1.

ONTARIO AND QUEBEC.

The principal of Macdonald College, Quebec, Canada, reported that no use of land is yet being made in connection with the teaching of agriculture in high schools in the Province of Quebec. The deputy minister of the Ontario Department of Agriculture, Toronto, had the following to say:

> I take it you mean the best use from the standpoint of developing interest in agriculture. Looking at it from this standpoint, I fear there is little in this Province which would be of assistance to you. Our district representatives, of whom we have now over 30 located at different points throughout the Province, conduct in many cases experimental plats covering an acre or less. These experiments have in most cases been very successful as experiments, but I do not know that they have had a very great effect in developing the interest in agriculture, particularly in the schools. Our work in the high schools outside the usual curriculum has consisted more in a course of six to eight weeks in the wintertime, supplemented in many cases by short courses of two or three days for the adult farmers, including those who do not attend school. At these short courses high-class stock is used for demonstration purposes. * * * I might add that the schools come under the Department of Education, and in addition to the work which is done by the Department of Agriculture in a general

[1] Conditions personally known to the writer.

outside way, the Department of Education is doing a great deal to develop interest in agriculture by means of school gardens, charts, object lessons, special training of teachers, etc.

SCHOOL LAND: DEMONSTRATION AND EXPERIMENT.

Where high-school land is reported as being used, in most cases it is being used for experimental or demonstration purposes, rather than for purposes strictly productive. Many schools have so recently undertaken their work that they have little in the way of results to report. The president of the North Dakota Agricultural College, for example, says:

> Our agricultural high schools only began during the month of September, and as yet no work has been done on the agricultural experimental plats except to prepare the ground for next year's crop.

Dean Davenport, of the College of Agriculture, University of Illinois, wrote:

> The high school at McNabb, Putnam County, has 24 acres of ground, and in the immediate neighborhood is one of our experimental fields. This is the first school of the kind to be located out in the open country, and I think should be mentioned as an ideal high school.

Unfortunately, the effort to secure information as to the use of the McNabb High School land was not successful.

SIZE OF SCHOOL PLATS.

The size of the experimental or demonstration plats varies from one-tenth acre up to 2 or 3 acres. Among the things shown the following were mentioned: Adaptation of different crops to the same soil conditions; effect of application of different fertilizers; variety tests of oats, potatoes with and without treatment for scab; grasses, wheat, legumes, corn; quantity of seed per acre for best yield, seed treated and untreated for smut; variety tests for yield per acre; effect of different depths of sowing; alfalfa growing with and without inoculation; soja beans, velvet beans, peanuts, cotton; rotation of crops; comparative effects of manures and commercial fertilizers on various truck crops; cover crops; effects of the use of lime; hothouse crops; orcharding.

PROFIT AND PROFIT SHARING IN CERTAIN CASES.

In a case now and then crops are grown for profit. In some cases the pupils have all the profit, in others the school has it, in others the profit is shared between the school and the pupils.

USE OF OTHER THAN SCHOOL LAND.

Twenty-two high schools reported agricultural production on home farm land or on other land apart from the school premises, with

more or less attention paid by the agricultural instructors to the home enterprises of their pupils. Following is the list:

Amaly Union High School, Sebastopol, Cal. (adjacent to school owned by district).
Cedron School, Natchitoches Parish, La.
Skowhegan High School, Skowhegan, Me. (home land and other land).
Madawaska Training School, Fort Kent, Me.
Agricultural High School, Sparks, Md.
Hopkins Academy, Hadley, Mass.
Harwich High School, Harwich, Mass.
Smith Agricultural School, Northampton, Mass.
Northboro High School, Northboro, Mass.
North Easton High School, North Easton, Mass.
Petersham High School, Petersham, Mass.
Howard Lake High School, Howard Lake, Minn.
Willmar High School, Willmar, Minn.
Maryville, Mo. (corn-growing contests).
Hopkinton High School, Contoocook, N. H.
Grafton High School, Grafton, N. Dak.
Crooksville High School, Crooksville, Ohio.
Bedford Village High School, Bedford, Ohio.
Waterford Borough and Township High School, Waterford, Pa.
Farragut School, Concord, Tenn.
Alford Academy, Burkeville, Tex. (corn club).
Chester Agricultural High School, Chester, Va. (work at home encouraged).
Ellsworth High School, Ellsworth, Wis.

CORRELATION OF STUDY AND HOME WORK RARE.

An effort, as you will see from the questionnaire, was made to ascertain how much of the agricultural instruction grew out of the actual home needs of the pupils or was such as to be directly applicable thereto, and how much of it consisted of the teaching of agriculture in general. Rarely has any attention apparently been given to the direct correlation of the home work of the pupils and their classroom instruction. One instructor writes:

> All members of the class do some home work and report each month in a written thesis. I regard this as a valuable part of the year's work. It is accepted at the university (California) on the same footing as any other regular study.

CASES OF SYSTEMATIC SUMMER SUPERVISION.

In answer to the question as to how often during term time and how often in summer the instructor supervised the home work, no replies were given. The general question, Does the agricultural instructor supervise this home-farm productive work? found affirmative answers. Sometimes the instructors report that they supervise fortnightly during term time and monthly during the summer. Usually, however, there is no summer supervision, and sometimes not even one visit to the home of the pupil for studying at first-hand the pupil's needs.

The most systematic supervision of home work is found in such cases as that of Virginia, where the instructor serves in a double capacity as teacher of the pupils who come to the school and as

demonstration agent among adult farmers; and in Massachusetts, where no vocational agricultural training may receive State aid which does not include the close correlation of classroom instruction with productive farming on the home land of the pupils and the systematic supervision of the home-farm work by the instructor from March through the summer until the end of November. (The Massachusetts agricultural instructors take their vacations in the dormant months of winter.) In Massachusetts the formal classroom instruction covers about four spring months and about two months in the fall. Supervision during those months of the home-farm work is less frequent than during the summer. The instructor's primary business in the summer is to keep in the closest possible touch with his pupils in their home work, and the frequency with which the instructor visits his pupils is determined chiefly by the distance which he has to travel. One instructor rides a circuit of between 50 and 60 miles from farm to farm among his pupils; another rides a circuit of over 40 miles. The shortest circuit is above 30.

CORRELATION AND SUPERVISION DESIRABLE.

It is now and then stated among the remarks submitted with the questionnaires that more home work, and closer supervision of that home work by the agricultural instructors, would greatly enrich the values of the training and the interest of the pupils in their instruction. Some who have never done anything of the sort express a hope that they may soon undertake a closer correlation of their classroom instruction and the home-farm work of their pupils, giving to that work the impetus of their personal enthusiasm and of their close and intelligent supervision.

PRIZES AS INCENTIVES.

In a number of cases reliance appears to have been placed on the offering of prizes as incentives to good home-farm work. Here the work is sometimes so organized that committees of responsible citizens undertake to inspect, and vouch for, the honesty and high quality of the work and results of the home enterprises. On the whole, there appears to be good evidence that prizes are of much assistance, whether the supervision of the home-farm work of pupils be carried on by committees of citizens or by the agricultural instructors. In Massachusetts, for example, 32 of the incorporated agricultural societies of the State have this year had, and will hereafter receive, State grants of $200 each for prizes at the fall fairs, on animals, farm crops, fruit and vegetables grown by the exhibitors, and on general excellence in stock judging. The stock-judging premiums were keenly contested for. The prizes at the local fairs were usually: First, $15 in gold; second, $10; third, $5. The Brockton Fair

Association put up $200 in scholarships to be competed for by the winners of the local contests. One hundred and eleven boys took part in the local contests and fifteen boys entered the final contest at Brockton. The boys from the Hadley (Mass.) School won $243 in prizes, besides a trip to Washington, D. C., won by one of the boys. Letters which were received show that local contests leading to some big contest in a State and some big prize there won, or to a trip to Washington, have added a decided zest to the agricultural training of both boys and girls.

SCHOOL LAND SOMETIMES DESIRABLE.

The United States Department of Agriculture was without funds for field work the past summer, and Mr. Crosby was unable to contribute data for this part of our report. From Mr. A. C. Monahan, of the Bureau of Education, the following very interesting accounts have been received:

It is impossible for me to say what school is making the best use of land for instructional purposes, but I like the plan in use at the Concord (Tenn.) Agricultural School for an institution working under the same conditions as that school. The pupils are all day pupils and those taking agriculture follow a scheme somewhat similar to the home-project plan, which you are advocating in Massachusetts. The school ground itself (12 acres) is divided between a playground and a demonstration plat. The principal's home is located on the school grounds. About 6 acres are used for gardens. On this land is carried out a series of demonstrations to show the merits of different methods of cultivation and fertilization.

The Cedron School in Natchitoches Parish, La., is making good use of its land. Conditions are very much different from those in Tennessee. The school has an enrollment of about 105 pupils in all grades from the first to the eighth, with boys and girls from 5 to 18 years of age. The school garden is comparatively small. It is managed as a common garden, no pupil owning any special part of it, but all work together upon the garden as a whole. It is made a model in every respect, and it is intended to teach the boys and girls, and the community as well, through this garden the best methods of cultivation. In the few years that the school has been in existence the garden has been the earliest in the community, has the greatest variety of vegetables, and vegetables of the best quality. Hotbeds are managed in connection with the school work and thousands of early plants are distributed free to pupils to take home to their home gardens. In addition to this work on the school grounds by the boys and girls under the direction of the principal (Mr. Bott), the children are organized into tomato, pig, and corn clubs; the tomatoes, pigs, and corn being raised at their homes. A canning establishment has been erected beside the school building as a community cooperative movement, with the principal of the school as its president. The motive for its establishment was to find an outlet for the vegetables raised by the school children, both on the school property and on their home land. It is, however, canning vegetables of all sorts for the entire community. This year it will put up and market at least 50,000 pounds, netting the community more than $2,000. It is 10 miles to the nearest railroad; so that such a community enterprise was badly needed.

SCHOOL LAND NOT INDISPENSABLE.

Sometimes it has been thought that agriculture can only be taught successfully where the school itself has land and live stock, each closely approximating the ideal of its kind. It may be of interest to

members of this association to know that the winner of the first prize, $150, at Brockton, Mass., and the winner there of the second prize, $50, in stock judging, were from a high school which does not own a head of live stock of any description. The training of these boys for the event was had by going from farm to farm and scoring the best animals found in the neighborhood of the school, also by a trip to the agricultural college, where excellent types of the different breeds of live stock to be judged were to be found. Substantial prizes were also won by pupils trained in agricultural classes at high schools which do not own or operate a foot of cultivated land.

ECONOMIC RETURNS.

The effort to secure information as to the profit of the individual pupils from the working of land other than school land was largely unavailing. The Madawaska Training School, Fort Kent, Me., reported returns not all in, but so far the highest net profit this year, $5.10. The profits are sometimes suggested, when not stated in specific figures. For example, the Savannah High School, Savannah, Mo., reported as follows:

> The work we have done with land has been in connection with a 9-acre tract, which we rented. The first year some of the boys of the class did the work; the second year (the present year) we had the work done by a man. We have directed the work and have used any materials we needed from the land. Our work has been confined chiefly to seed corn, seed oats, clover, millet, potatoes, and alfalfa. The profits have gone to the owner of the land and to those who did the work.

MASSACHUSETTS RESULTS.

By net profit, of course, is meant profit after the pupil had paid himself for his own labor and had met all other expenses in connection with his crop or crops. The highest net profit for 1911–12 in Massachusetts was $270.24. This pupil had paid himself $109.02 for labor and had paid others of his family for labor, use of land, etc., $771.49. The total income of the family from his home project, which consisted of the handling of 12 dairy cows from November 7 to June 7, and which had been carefully studied at the school and supervised by the agricultural instructor, was $1,150.75. In addition this boy, 18 years of age, was allowed by his father for other farm work done at home $200. The boy's income from farm work alone, therefore, for the school period covered by the report, was $579.26. This is one of the best examples of the combination of *earning and learning* in the carrying out of the Massachusetts plan of "part-time" training in agriculture which was discussed before this association a year ago. (See, also, above, p. 34.) The least favorable total this year was $7 from a one-eighth acre garden, immaculately kept, but so carefully kept that the labor cost, in spite of the instructor's

best advice, ran up far too high for economic production. Some of the figures were radically reduced by crop failure due to unseasonable frosts, drought, or blight. One boy's garden was cut back three times by killing frosts. Appendix D gives items taken from the accounts of 5 boys from each of five representative points in Massachusetts where this plan of training has been in operation the past season. All but 3 of these boys showed earnings from farm work running into three figures. Two earned over $300, 12 earned over $200. Of the 3 that fell under $100, 1 earned $95.10; another, $64.90; and the third, $58.47. The total farm earnings of the 25 pupils exceeded $5,000.

VIRGINIA METHODS AND RESULTS.

Some of the returns sent in, apart from the questionnaire blank, cover both high-school and elementary-school training. On the whole, however, the following letter from J. D. Eggleston, State superintendent of public instruction of Virginia, bears perhaps more closely on high-school training than on elementary, and is therefore here given:

First. We have organized in 45 out of the 100 counties corn clubs composed of schoolboys ranging from 10 to 18 years of age. We have about 2,500 boys in these clubs.

We have in each of these counties a man called the "demonstration agent," whose business it is to assist the adult farmer or any member of our boys' corn club who desires to be shown how to raise better crops of corn and grass. The adult farmer uses as much of his own land as he pleases in following the directions of the demonstration agent.

Each boy has 1 acre on his father's farm; if he has been a member of the corn club for more than one year, he has his acre of corn and also an acre of grass. He works strictly under the eye of the demonstration agent, and the agreement with the father is that the crop belongs to the boy, as we do not desire the boy to be exploited, and we wish to teach him that phase of citizenship which is expressed in terms of commerce.

We have also 11 agricultural schools; four years ago we had 2; we hope to add 1 or 2 to the list each year, and we are arranging in these schools, and have already arranged in 5 of them, so that the teacher of agriculture at the school shall also be the demonstration agent in the county in which the school is situated.

Through a cooperative arrangement with the United States Department of Agriculture, the State of Virginia, the State board of education, and the local educational authorities, the program of work for the demonstration agent is agreed upon. For example, at the agricultural school in Nansemond County the instructor in agriculture at the school devotes three days of the week to the school farm and the agricultural work at the school; and three days of the week in the county, showing the farmers and the boys on their farms how to improve agricultural production.

We have the same plan at the Nottoway County High School, situated at Burkeville, Va., and the same plan will be started at three other schools this fall. The plan has worked admirably in Nansemond County and in Nottoway County, and has helped to popularize schools to a great extent.

It is now a common thing for farmers to come to the schools to have seed tested, to seek advice on all sorts of matters pertaining to the farm, and to ask for the services

of the demonstration agent on their farms. You can imagine the hold that this gives the school upon the community within a radius of 6 to 10 miles and even farther.

The instructor in agriculture in the Nansemond Agricultural School last session probably paid back to the farmers three or four times the amount of his salary by showing them how to eliminate hog cholera, which had been "rife" in that county for years. He has completely eliminated it.

This does not include the excellent work that he has done in increasing corn production, cotton production, trucking, and the raising of grass; and I may say in this connection that where this demonstration work is being done, the increase in corn per acre has been phenomenal. The same may be said of grass, and, of course, the teaching will be extended to other farm produce. We had to begin with what we thought was the easiest thing to take hold of.

Second. Our idea here is that the best use that can be made of the school land or school farm is to use it as a demonstration plat to show what the land will produce, and while using it in this way to use these materials as the proper subjects upon which the children may concentrate their self-activities.

You can see, for example, that any amount of arithmetic of the best kind can be gotten through school farm work. We require accurate accounts of outgoing and incoming; we require that the account be balanced at the end of the crop; we require that the boy shall, at every step, describe clearly what he is doing, and why; and we thus get excellent materials for the study of arithmetic, oral and written language, writing, spelling, etc.

It seems to me to be proper that a certain amount of the school farm work shall be done by the children for the school. I mean by this that the products to a certain extent shall accrue to the common fund in this miniature democracy, and that the funds from the sale of these products shall, with the consent of the children, be used for the enrichment of the democracy; as, for example, for library books, for pictures, and for other purposes of improving the democratic environment.

Beyond this, the children should receive pay for their labor; and if they do not, the management of the school becomes autocratic and the child is exploited, which is absolutely foreign and repulsive to democratic ideals.

The child is a citizen in the making and the teacher is the citizen maker. The school is the atmosphere for the growth of democratic ideals. The citizen is not complete who does not know the value of labor and who does not receive the proper return for his labor.

* * * * * * *

I can not state too strongly that I believe that the best place to teach agriculture is on the farm, and that it will not cost any more money and will produce much more satisfactory results in every way if we have the boy apply the theory, not at the school, but on the farm where he is likely to make his own living in the future.

I need not say to you that one of the great handicaps to the teaching of agriculture in high schools is that it tends to become a purely academic routine; and a healthy, energetic boy becomes utterly disgusted with studying about agriculture and going through all sorts of motions, when his whole being cries out for the opportunity to shuck his coat and feel the sweat spring from his pores, while he knows that he is working his own crop with his own muscle and that the returns for his labor will go into his own pocket.

USE OF LAND HINDERED BY OTHER TEACHING.

Failure to pay attention to the home conditions and home work of the agricultural pupils one may suspect is often to be found in the fact that the instructor must teach other subjects than agriculture. The questionnaire called for returns as to how many agricultural

instructors were called upon to teach other subjects than agriculture. Thirteen reported that they taught only agriculture, 41 reported that they taught other subjects. Among the other subjects which the instructors were called upon to teach were the following: Physical training, manual training, physiology, biology, zoology, botany, physics, chemistry, physical geography, bookkeeping, psychology, rhetoric, English, Latin, German, algebra, geometry, history, civics, and geography.

USE OF HOME FARM LAND MOST IMPORTANT.

Your committee feels that an enormous opportunity for usefulness, both cultural and vocational, is being missed where the teaching of agriculture by high schools is not so conducted as to stimulate home production and to bring that home production to a high state of efficiency through the patient and sympathetic but persistent supervision of competent agricultural instructors. It is reported that in New York 28 high schools are teaching agriculture; in Ohio, 900. Your committee is of the opinion that the hour is at hand for furthering, not so much the rapid extension of the teaching of agriculture to an ever-growing number of high schools, as the improvement of the quality of the instruction where it is already established by centering it upon supervised economic production carried out by the pupils on their home farms.

(*c*) IN ELEMENTARY SCHOOLS.

RETURNS FROM OHIO.

Ohio reports that 10,000 elementary schools in that State are now teaching agriculture. Mr. Lester S. Ivins has written that in Ohio there are now about 1,500 boys in the acre corn contest and 2,000 boys in the acre wheat contest. Winning boys in each county get large cash prizes and free trips to Washington, D C. The above contests are by country boys in the country, excepting in a few cases where city boys went out into the country and secured acre plats in order to get into the contest.

Our estimate on village and city gardens, on vacant lots and back-yard home gardens, is 25,000 pupils. This is very conservative, because many gardeners in out of the way places did not register.

The following is a very interesting report of the Willard School Farm, Willard Avenue, Cleveland, Ohio, submitted by Mr. R. F. Powell:

Our Willard School Farm is just closing a very successful summer's work, a report of which I will gladly send if you desire it. It is not, however, a part of any high-school or grade-school curriculum. The class is conducted during the summer months

only, and the class is made up of volunteers, principally from Willard School fourth, fifth, sixth, seventh, and eighth grades.

To properly describe the land that we have in use, I need to divide it into three parts: First, Willard Farm proper consists of three large vacant lots in close proxity to each other, which together contain 2½ acres. They are divided into 165 gardens containing 600 to 800 square feet each. They are properly prepared and fertilized and are loaned to children in the fourth, fifth, sixth, seventh, and eighth grades of the public schools to cultivate, on condition that the plat must be well cultivated and cared for and that the holder must not trespass upon anyone else's garden, on pain of forfeiture of his or her plat. Everything grown upon a garden belongs to the boy or girl who does the cultivation and may be disposed of as he or she may wish.

Each gardener pays a fee of 35 cents if in the eighth grade and 25 cents in all other grades, for which he receives all the seeds and plants and tools required in his garden.

When a boy or girl passes out of the eighth grade, if he wishes to continue his agricultural work he must borrow a vacant lot of someone any size up to a half acre. These are also thoroughly prepared and fertilized. The gardener furnishes all his seeds, plants, and tools and receives the entire crop. There were 3½ acres of such lots cultivated by my boys this year. Four of these boys earned from $75 to $150 each during the summer months. The third division of the work is the home garden. It is usually in the back yard or a vacant lot next door. The care of preparing and fertilizing is done by the gardeners, which often includes two or more members of the family. My only part in connection with these gardens is an occasional visit and such kindly advice as may be asked for. There were about 500 such gardens this year in this (Willard) School District. Last year there were about 250, and the year before about 125. I think I am justified in believing that much of this rapid increase in the number of home gardens is due to the very successful gardens that the 165 children had in Willard School Farm.

RETURNS FROM MASSACHUSETTS.

In Massachusetts, under the inspiration and guidance of the extension department of the Massachusetts Agricultural College, land has been used the past year by school children, chiefly elementary, as follows: Raising corn, by 4,562 children; raising beans, 1,814; raising potatoes, 6,781.

Mr. W. R. Hart, professor of education at the college, who gave these figures, wrote further as follows:

In addition to these, there were two clubs, smaller in number—one, the potato culture club, numbering about 190. These were given special directions as to the culture of potatoes, with a view to discovering a strain of high-yielding tubers by selection of seed from the best producing hills. Another club which I organized this year for the first time is called the Junior Corn Growers' and Junior Potato Growers' Club, in which a half acre of potatoes and a whole acre of corn were taken as a basis of competition in a prize contest. This club numbered 29, located for the most part in Hampshire County. I did not extend it throughout the State, because I wanted to make a try-out of the details of the work connected with such a club before making it a State-wide organization. I have now got the matter sufficiently well in hand to extend the proposition to all boys of the State next year. It will constitute one feature of the work in charge of Prof. Morton. After this year's experience, it seems advisable to reduce the area in the case of potatoes to one-eighth of an acre and in the case of corn to one-fourth of an acre. Quite a number of Mr. Burke's boys in

Hadley were in this contest, and I find that not only his boys but those in Amherst, who are attending school, are having difficulty in securing the crops on as large an area as the acre of corn or the one-half acre of potatoes without hiring considerable help. It is on this account that I think it advisable to reduce the area, especially in the case of boys who are attending school. For young men under 19, who have quit their school work, a larger area may still be advisable and some change in that direction may be made in the future.

APPENDIX A.

SUMMARY OF INFORMATION FROM SPECIAL SCHOOLS OR CURRENT BULLETINS.

(Figures in parentheses are cost of maintaining land, annually, as reported.)

ALABAMA.

First District School: 57½ acres owned. ($1,000.) Demonstration work; 5 varieties corn; 7 varieties wheat, in 1-acre plats.

Third District School: 40 acres owned; 25 acres in cultivation, experimental. Work: Chemical needs of soil are studied; physical defects are remedied; improvement of worn soil; rotations are practiced; variety tests of corn done; fertilizer tests of corn and cotton made; variety tests of grasses and forage crops; cultural methods taught; students are required to do some farm work.

Fifth District School: 80 acres owned; not all used for demonstration work. Breeding work: Plats, 15 acres wheat, corn, oats, and vegetables. General farm work, 45 acres.

Sixth District School: 80 acres owned. ($1,000.) Variety and fertilizer tests. Demonstration work for maximum yields, 1 acre. Three-fourths of land used for demonstration of corn and cotton. All boys required to do two hours of work per week on farm.

Eleventh District School: 300 acres owned; 60 acres under cultivation; 20 acres for experimental purposes; remainder for general farm crops.

ARKANSAS.

First District School: 462 acres, consisting of both high and low lands. Various crops; 300 acres used. Hired labor and some schoolboys carry on the work. During school year the boys did major portion of work. Much stock.

Second District School: 200 acres tillable land. Corn, 47 acres; sorghum, 30 acres; melons, 2 acres; etc. Orchard. 1912—Acre rotation plots, cooperative plan; school to furnish seed, tools, etc., and boys the labor. Each to share one-half. Much stock.

Third District School: 400 acres; 150 acres cultivated for demonstration purposes; remainder for general farm. Orchard work; breeding plat work; seed selection work; variety testing work, 68 acres; fertilizer test; deep plowing test; cover crops experiment; much stock.

Fourth District School: 500 acres; some gravelly ridges and some bottom land; 100 acres to general crops. All work done by students, paid. Have some live stock.

CALIFORNIA.

University Farm School, at Davis: 779 acres. Experimental work by the agricultural experiment station of the University of California. Field work by students, observation. In agricultural botany students have small (20 feet by 24 feet) garden plats. Demonstration and experiment plats are in charge of experiment station and separate from school.

COLORADO.

Fort Lewis School of Agriculture: 6,400 acres; 130 acres cultivated. Grains and orchard work.

GEORGIA.

General notes for all the district schools of Georgia: Students work on farm part time during school year; paid; third and fourth year students have acre plats. Class and field work go together. Income from farms, 1911, $395 to $3,716; from the 11, $22,832.

Second District School: 315 acres; 80 acres in practical farming, agronomy; 5 acres, horticulture; remainder for pasturage and forestry. Have some stock.

Fifth District School: Monroe, Ga. No data.

Ninth District School: Model farm.

MARYLAND.

Sparks Agricultural School: 7 acres owned. Experiments in orchard. Dozen one-eighth acre wheat varieties; 20 grass plats. Each student has 1 acre at home for summer work. Demonstration plats on 25 farms; alfalfa, etc.; work on 100 farms in 1911; 200 corn growers' club plats in 1911; new variety corn introduced on 1,000 farms.

MASSACHUSETTS.

Smith's Agricultural School: 93 acres owned. Demonstration. ($1,500.) Five acres growing young apple orchard; 1 acre spraying, pruning, and renovating old orchard; one-fourth acre raspberries; one-eighth acre peach nursery; 2 acres garden; one-fourth acre ear to row corn test (best yield 116½ bushels corn from 50 hills); one-fourth acre alfalfa; remainder general crops.

MICHIGAN.

Dunbar School, Chippewa County: 600 acres; 80 acres cultivated. ($1,500.) Second year only. Have some stock. Students work part of time, by groups; no individual plat work yet. Planned: Agronomy, 1 acre to one-twentieth-acre plats; grain breeding and forage crops; preparing seed bed and fertilizer. Horticulture, 1 acre; vegetables for school only; propagation of plants and cultural methods. Soils and fertilizers, 1 acre to one-twentieth acre; to determine what special fertilizer is needed. Remainder, pasture for cows and pigs and grain for stock; some forestry work.

Menomonie County School: 105 acres; use 52 acres. ($1,200.) (Receipts for 1911, $564.) Agronomy, 40 acres, one-tenth acre to 4-acre plats. Horticulture, 1½-acre to one-tenth acre plats. Demonstration work outside with alfalfa and potatoes; experiments with green manuring and fertilizers; different rotations of crops; corn breeding work.

MISSISSIPPI.

Harrison County: 500 acres; 25 acres worked in 1912; 2 acres by each student; 5 acre demonstration plats; 1-acre to one-twentieth-acre fertilizer plats; have stock.

Bolivar County Industrial College: 20 acres of land. No data received.

Sunflower County, Moorhead: 35 acres; ¼-acre rotation plats planned for next year; students have plats—they draw plans, prepare soil, and do demonstration work; aim is to have an ideal farm.

Jones County Agricultural High School: 40 acres. ($500.) Land is terraced; cleared of stumps. ($1,000.) Soil-improvement crops put on last season; aim is to make farm work demonstrational; farm is now on self-supporting and paying basis.

Alcorn County: 40 acres owned; land is worn out; will be built up.

Simpson County: 5-acre to one-half acre demonstration plats in soils and fertilizers; experiments carried on by subsoiling with dynamite.

Noxubee County: 40 acres. ($1,500.) Demonstration—1 acre wheat; 7 acres corn; one-fourth acre peanuts; 1 acre peas; one-fourth acre beans; one-eighth acre soy beans; 1½ acres potatoes; 1 acre garden; 15 acres hay. Aim is to distribute garden seed and to teach diversified farming.

Mayne County: 90 acres; 40 acres in open; have stock. All students do some farm work. Demonstration plats—13½ acres in one-half acre plats; 6 acres in agronomy department, inclusive; horticulture—fertilizer on corn; 1½ acres in one-eighth acre to one-fourth acre plats to show yields, adaptability, root and stem growth. Soils and fertilizers: 2 acres nitrate of soda on oats and corn; 2 acres to find difference in uplands and lowlands for cane; 1 acre to find difference in benefit to land of grass and pea crop; general uses for remainder of farm. "Offering suggestions to those who will take them" is one of the aims.

NEW YORK.

State School of Agriculture at Alfred: 236 acres owned; 130 acres cultivated. ($150.) To determine comparative yields of cereals and root crops; commercial records kept on farm; to demonstrate advantage of seed selection and breeding of pure seeds; drainage; fertilizer tests; to demonstrate profit of old abandoned orchard; to show cost account of 1 acre renovated orchard (net income $100); to show 1 acre potato yield 288 bushels; ($44); 17 acres were used exclusively for experiments and growing plants for class use; much stock kept; variety work done.

State School at Morrisville: 200 acres for demonstration work; has some stock.

State School at Canton: 170 acres, leased; no experimental work planned; have stock. (1) Work to determine cost of production: 4½ acres potatoes—planting, spraying, storming, selecting seed, fertilizing, and digging; corn, 18 acres; oats, 16 acres; cabbage, 1⅛ acres; beets, seven-sixteenths acre (one-half sugar beets); alfalfa, nine-sixteenths acre; hay, 43 acres. (2) Demonstration work: (A) Fertilizer for oat plant; proper amount of seed per acre without loss to clover seeding. (B) Ear-to-row corn work; corn breeding. (C) Chemical fertilizer.

OKLAHOMA.

Murray State School: 190 acres; 10 acres for demonstration purposes. ($4,000.) Has stock. Students do no work yet, but will have it soon; they have 1½ hours' work a week now. Agronomy, one-fourth acre plats; cost of production; system of culture, care, etc. Soils and fertilizers, 10 acres; barnyard fertilizer; next year will have commercial fertilizer; balance of farm for farm crops. Experiment work on outside farms in wheat, corn, milo maize, Kafir corn, soy beans, peas, peanuts, alfalfa.

Connors State School: 160 acres owned. ($1,000.) Demonstration work; good farming methods are advanced. Experimental work may be taken up next year. Students are required to do some work on farm.

Cornell State School: 91 acres; experiment farm crops. ($2,000.)

Cameron State School: 160 acres; part upland and part lowland; 100 acres cultivated, showing cultural methods; 4 acres irrigation plant. Value of good seed; variety testing. Road making.

Panhandle Agricultural Institute: 80 acres. ($600.) 10 acres in 1912. Summer tilled one-half and put one-half to crops. Work: Best cultural methods; grading and judging plants; study of seed. Experiments: Testing use of fertilizer; various grain and forage-crop experiments; breeding work; drought-resistance crops. Increased plats to farmers; 65 acres in 1912; 30 acres summer tilled; one-half acre alfalfa; 1½-acre fertilizer test; 5 acres for crops for class use; 2-acre drought-resistance crops; 1 acre sorghum; 2 acres orchard; 18 acres increased plats.

Haskell State School: 80 acres. Results: 1 variety broom corn, O. K.; several cross-bred sorghums, promise well. Plans: Pure seed work.

PENNSYLVANIA.

National Farm School: 360 acres; cultivated by student body of 74, who work three years, using one-tenth acre plats; they work 31 hours a week; $9,000 net profit; $500 were paid to two only, who cultivated 50 acres; corn breeding work carried on; work with shrubs and flowers. Production: 119 acres hay, 9 acres sweet corn, 10 acres tomatoes, 10 acres apples, 1 acre grapes, 13 acres rye, 9 acres oats, 4 acres vegetables, 61 acres corn, 8 acres potatoes, 4 acres pears, 8 acres cowpeas, 4 acres wheat, 1 acre cabbage, 2 acres asparagus.

VERMONT.

Randolph Center: 100 acres owned. ($1,200.) School farm used as model and demonstration farm for school; animals and fields used as material for school; experiments are being carried on in corn breeding, oats, and fertilizers; cooperative work on orchards, cow testing, and agricultural advice.

WISCONSIN.

La Crosse County School: 140 boys in county each have one-half acre plat—come under school direction; demonstration plats, 5 acres. Agronomy, one-tenth acre to 1 acre; alfalfa, oats variety tests, fertilizer tests, ear-to-row corn test. Soils and fertilizers. Use peat and commercial fertilizer on sandy soil. Forage crops—Canadian peas and oats for hay; corn for silage; alfalfa.

Dunn County School: 6 acres; leased since 1902. Horticulture—different trees and shrubs planted; work with various grains; vegetables; variety tests carried on; treatment, fungus diseases, insect control; land first planted to corn; now in alfalfa; want 80 to 160 acres of land.

Milwaukee County School of Agriculture: 236 acres; owned; 10 acres orchard; 200 trees and 7,000 plants of various types.

Winnebago County, Winneconne: 11 acres. ($250.) Drainage work carried on; need 40 acres for model farm and 5 acres for testing varieties. Agronomy: 2 varieties wheat, 1 acre each; 1 variety corn, 5 acres; 2 acres for ear to row corn test; 1 acre for orchard and shrubs; onions, 1 square rod, several fertilizers used; variety test work with potatoes, soy beans, and cabbage. Corn-growing contest carried on on outside farms. Farm side a failure.

Marathon County, Wausau: 3 acres; raise pedigreed grains; orchard, 1 acre, used for experiment and demonstration work in pruning and spraying by students.

Marinette County, Marinette: 6 acres. ($500.) 2 acres of one-eighth acre plats for agronomy demonstration work; 2 acres of one-half acre plats for fertilizer work.

APPENDIX B.

Demonstration work at Northwest School of Agriculture, Crookston, Minn.

(Income 1912, $5,600.)

Projects.	Acres.	Year started.
1. Five-year rotation	2.5	1911
2. Three-year rotation	1.5	1911
3. Wheat continuously	.5	1911
4. Wheat continuously with red clover	.5	1911

Projects.	Acres.	Year started.
5. Seven-year rotation	3.5	1911
6. Corn continuously	.5	1911
7. Milling-wheat experiments (4 varieties)	.75	1912
8. North Dakota wilt-resistant flax (variety test)	.25	1912
9. Alfalfa work (variety, fertilizer, and nurse-crop tests)	2.0	1908
10. Quack grass plat	1.0	1910
11. Variety test of 137 varieties of wheat, oats, and barley	7.7	1912
12. Fiber flax (experiment in cooperation with Federal Government)	2.0	1912
13. Corn breeding (Minnesota No. 23)	1.0	1911
14. Winter-wheat experiments	1.0	1911
15. Tillage experiment:		
(*a*) Use of packer	.5	1912
(*b*) Subsoil plowing	.5	1912
(*c*) Dynamite subsoiling	4.0	1912
16. Rate of sowing grains:		
(*a*) Wheat	1.0	1912
(*b*) Oats	1.0	1912
17. Methods of sowing grass—		
(*a*) On disked barley stubble	1.15	1912
(*b*) On fall plowing	.38	1912
(*c*) On corn stubble		1912
(*d*) On potato ground, not plowed		1912
(*e*) Demonstration plats	.25	1911
18. The use of fertilizers (demonstration with crops in a 7-year rotation, and with alfalfa)	.20	1912
19. Major farm rotation:		
(*a*) 5 fields of 50 acres each in 5-year rotation	250.0	1911
(*b*) 7 fields of 30 acres each in 7-year rotation	210.0	1911
20. Drainage (see Bulletin No. 110, Minnesota Experiment Station)	320.0	1908

For projects in poultry raising see Bulletin No. 119, Minnesota Experiment Station.

Horticultural projects were as follows: (1) Variety testing in vegetable garden—(*a*) Cucumbers, 2 varieties; (*b*) cabbage, 2 varieties; (*c*) beets, 3 varieties; (*d*) carrots, 4 varieties; (*e*) parsnips, 3 varieties; (*f*) peas, 3 varieties; (*g*) radishes, 3 varieties; (*h*) sweet corn, 3 varieties; (*i*) tomatoes, 7 varieties; (*j*) beans, 2 varieties; (*k*) onions, 4 varieties; (*l*) lettuce, rutabagas, and turnips, 1 variety each; (*m*) cauliflower, 2 varieties; (*n*) squash, 2 varieties; (*o*) pie pumpkin, 2 varieties.

(2) Potatoes: (*a*) Variety testing, 7 varieties; (*b*) potato experiments—Selected seed (cellar selection), hill-selected seed, common-run seed, rose tips or run-out seed, scabby seed treated with formalin, scabby seed untreated, seed ends as seed, stem ends with eyes; (*c*) experiments on larger fields—Early Ohio treated with formalin, untreated seed, Carmen No. 1 treated, Carmen No. 1 untreated; (*d*) spraying experiment—Early Ohio sprayed three times, Bordeaux 5–5–50; early Ohio checked; Carmen No. 1, Bordeaux 5–5–50, three times; Carmen No. 1 checked; all other varieties sprayed two times, 5–5–50.

(3) Nursery work: (*a*) Fruit-tree grafting; (*b*) cuttings planted; (*c*) seed collecting.

(4) Fruit planting: (*a*) Apples, 6 varieties; (*b*) crab apples, 4 varieties; (*c*) plums, 3 varieties; (*d*) cherries, 2 varieties; (*e*) bush fruits, 4 varieties; (*f*) strawberries, 4 varieties.

(5) Conifers, 3 varieties.

(6) Experimental lawn seeding.

Another project of the Crookston school was that of minor rotation for hogs.

APPENDIX C.

List of 1912 suggestive topics for "summer practicum" work, Northwest School of Agriculture, Crookston, Minn.

1. Growing green feeds for hogs. Feeding. Results.
2. Planting of fruit trees and shrubbery.
3. Various garden projects.
4. Growing green feeds for chickens. Feeding. Results.
5. Various cultivation projects.
6. Various fertilizer projects.
7. Grain breeding work.
8. Corn breeding work.
9. Alfalfa growing.
10. Full system of farm accounts of home farm.
11. Laying out the home farm and starting a rotation.

APPENDIX D.

Massachusetts State-aided vocational agricultural education: Examples of the income of pupils from farm work during attendance at school in 1912.

School or department.	Pupil's age.	Project or projects.		Pupil's project income.			Other family income from pupil's project.			Cash or credit received by pupil from farm work during project period.			
		Title.	Scope.	Net profit.	Paid self for labor.	Total.	Labor, man or horse.	Rent, seed, etc.	Total.	At home.	Away from home.	His own project.	Grand total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Northampton	18	Dairying	12 Jerseys, Nov.–June	$270.24	$109.02	$379.26	$109.02	$662.47	$771.49	$200.00	.....	$379.26	$579.26
Northampton	19	Hotbed	Mar. 1–June 7	37.80	8.80	46.60	.....	4.95	64.30	180.00	$14.75	122.94	317.69
		Poultry	22 R. I. reds	16.94	6.00	22.94	.....	25.05					
		Potatoes	¼ acre	16.28	2.42	18.70	3.10	6.40					
		Strawberries	1,000 plants	26.65	8.05	34.70	16.80	8.00					
Northampton	18	Hotbed	Early spring	11.04	3.46	14.50	.....	1.73	37.16	175.00	68.00	[1] 51.81	294.81
		Potatoes	¼ acre	3.68	3.82	7.50	4.83	8.44					
		Poultry	28 White leghorns	28.74	4.52	33.26	.....	22.16					
Northampton	18	Poultry	52 barred rocks 4 months.	19.22	13.72	32.94	.....	16.10	16.10	.....	162.50	32.94	195.44
Northampton	20	Alfalfa	Seeding down 1⅛ acres	.....	4.83	4.83	9.97	31.35	41.32	.....	145.05	4.83	149.88
Petersham	15	Garden and potatoes	½ acre each	93.30	16.76	110.06	29.45	1.00	30.45	100.60	48.00	110.06	258.66
Petersham	14	Garden	⅝ acre	44.35	12.00	56.35	5.00	15.35	20.35	164.60	6.08	56.35	227.03
Petersham	14	Garden	3/16 acre	10.67	20.00	30.67	4.00	4.75	8.75	150.00	2.50	30.67	183.17
Petersham	17	Garden	⅜ acre	14.03	11.80	25.83	4.65	16.60	21.25	63.50	22.50	25.83	111.83
Petersham	15	Garden and potatoes	⅛ and ½ acre	18.00	15.00	33.00	23.53	.....	23.53	32.10	30.00	33.00	95.10
Hadley	17	Fruit and corn	1 acre c. 118 apple trees	68.00	8.45	76.45	47.14	36.75	83.89	157.50	27.00	76.45	260.95
Hadley	18	Bees, poultry, corn	3 hives, 25 R. I. reds, 1 acre c.	58.50	38.50	97.00	8.00	16.00	24.00	116.00	.....	97.00	213.00
Hadley	15	Corn and poultry	1 acre c., 19 birds, 30 chicks.	28.27	20.20	48.47	10.80	10.50	21.30	232.00	15.00	48.47	295.47
Hadley	18	Fruit and poultry	20 apple trees, off year, and 100 birds.	20.15	6.15	26.30	3.00	2.00	5.00	47.30	125.30	26.30	198.90
Hadley	16	Poultry	34 R. I. reds	7.65	13.50	21.15	.....	3.00	3.00	202.50	12.50	21.15	236.15
Northborough	17	Sweet peas	128 sq. rods	43.00	14.70	57.70	.....	.....	.....	168.00	.....	57.70	225.70
Northborough	16	Garden	91 sq. rods	30,00	3.00	33.00	3.13	6.00	9.13	185.00	15.00	33.00	233.00
Northborough	16	Potatoes and corn	⅛ acre p., 1 acre c	23.50	13.80	37.30	5.85	12.65	18.50	197.50	.....	37.30	234.80
Northborough	17	Corn and potatoes	1 acre c., ¼ acre p	33.10	11.25	44.35	9.25	46.95	56.20	132.00	5.00	44.35	181.35
Northborough	16	Potatoes	¼ acre (drought)	.92	7.57	8.49	1.40	23.60	25.00	167.50	.....	8.49	175.99
Harwich	15	Garden	¼ acre	31.27	15.20	46.47	6.00	2.50	8.50	12.00	.....	46.47	58.47
Harwich	17	Garden	1 acre	75.00	18.10	93.10	1.90	5.00	6.90	5.00	10.00	93.10	108.10
Harwich	17	Garden	½ acre	12.63	22.40	35.03	1.20	4.00	5.20	65.00	.....	35.03	100.03
Harwich	17	Garden	⅛ acre	15.92	6.70	22.62	1.40	1.30	2.70	75.00	5.00	22.62	102.62
Harwich	14	Garden and potatoes	¾ acre	7.90	7.00	14.90	9.62	.....	9.62	12.00	38.00	14.90	64.90
Totals for 25 pupils	.....	.....	.....	1,066.	446.72	1,513.47	319.04	994.60	1,313.64	2,840.10	752.18	1,510.02	5,102.30

[1] Project income less shrinkage in inventory of $3.45 gives $51.81.

APPENDIX E.

QUESTIONNAIRES SENT OUT.

I.

Use of land by high schools teaching agriculture, school year 1911–12.

Please send returns by November 1, 1912. Returns earnestly desired.

1. High school teaching agriculture. Name.....
   Location.....
2. Agricultural instructor:
   Name..... Address.....
3. Number of agricultural pupils.....
   Number of girls taking agriculture.....
4. Agriculture is taught in what year or years of high-school course?.....
   (1) Number of weeks in school year.....
   (2) Agriculture, how many weeks per year?.....
   (3) Agriculture, how many days per week?.....
   (4) Agriculture, how many periods per day?.....
5. Are agricultural pupils fitted for college?.....
   Or fitted primarily for farming?.....
6. How many agricultural pupils live at home during school year?.....
   (1) Number of nonresident or boarding agricultural pupils.....
7. Is agricultural production on home farm land or on other land apart from the school premises required?.....
   (1) Number working such land.....
   (2) Area, in acre terms cultivated by each.....
   (3) Does the pupil keep strict accounts?.....
   (4) Who has the profit, parent or pupil?.....
   (5) Highest net profit this year.....
   A. Additional amount paid self for labor .....
   (6) Commonest profit.....
   (7) Does the agricultural instructor supervise this home farm productive work?
   .....
   A. Supervises how often during term time?.....
   B. How often in summer?.....
8. Has the high school productive farm land?..... How many acres?.....
   (1) Are agricultural pupils required to cultivate it?.....
   (2) Primarily for whose profit, that of school or pupil?.....
   (3) Do pupils work as a group or gang?.....
   (4) Do pupils work individual plats?.....
   (5) If so, size of plats in acre terms.....
   (6) Profit of school this year.....
   (7) Profit per pupil.....
9. What area, if any, is devoted to demonstration plats?.....
   Size of plats?..... Showing what?.....
10. Does agricultural instructor teach nonagricultural subjects?.....
   (1) If so, what?.....
   (2) A. How many periods per week for agriculture?.....
   B. How many for nonagricultural subjects?.....
11. Proportion of time given to—
   General study of agriculture.....
   Agricultural science as directly applicable to the productive enterprises undertaken by the pupils at home or at the school.....

12. Remarks: .....

(Continue remarks on back of sheet and on other paper at will. Speak of features which have given you the best practical and educational results.)

II.

Use of land by special secondary schools of agriculture, school year 1911–12.

1. Name of special school of agriculture.....
2. Location of this school.....
3. Name and title of head of school:
   Title..... Address .....
4. Number of years in agricultural course, ...; weeks in school year.....
   (*a*) Agronomy (including agronomy, grain judging, field crops, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*b*) Horticulture (including horticulture, vegetable gardening, fruit growing, plant propagating, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*c*) Soils and fertilizers are taught ..... days a week ..... weeks a year during ..... years.
   (*d*) Animal husbandry (including animal breeding, dressing meats, feeding, poultry husbandry, stock judging, study of breeds, veterinary science, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*e*) Farm engineering (including blacksmithing, carpentry, drawing, farm machinery, gasoline engines, farm drainage, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*f*) Agricultural science (including agricultural botany, agricultural chemistry, agricultural physics, economic entomology, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*g*) Dairying (including dairy husbandry, dairy chemistry, dairy practice, dairy breeds, etc.) is taught ..... days a week ..... weeks a year during ..... years.
   (*h*) Farm management (including farm accounts, farm management, agricultural economics) is taught ..... days a week ..... weeks a year during ..... years.
5. Previous training of students.....
   (*a*) Agricultural course fits primarily for what kind of work? .....
6. How many agricultural pupils live at home during school year?.....
   (*a*) Number of nonresidents, or boarding, agricultural pupils.....
7. Is agricultural production on home farm land, or is other land apart from the school premises required?.....
   (*a*) Number working such land.....
   (*b*) Area in acre-terms cultivated by each,.....
   (*c*) Does the pupil keep strict accounts? .....
   (*d*) Who has the profit, parent or pupil?.....
   (*e*) Highest net profit this year.....
      (a) Add what amount paid self for labor.....
   (*f*) Commonest profit.....
   (*g*) Do the agricultural instructors of the school supervise the home farm production work? .....
      (a) Supervises how often during term-time? .....
      (b) How often in summer? .....
8. Has the special school productive farm land? .....
   How many acres?.....
   (*a*) Age agricultural school pupils required to cultivate it .....

(*b*) Primarily for whose direct profit, that of the school or pupil? .....
(*c*) Do pupils work as a group? .....
(*d*) Do pupils work individual plats? .....
(*e*) If so, size of plat in acre-terms.....
(*f*) Profit of school this year.....
(*g*) Profit per pupil.....

9. What area, if any, is devoted to demonstration plats on the school farm—total area .....
(*a*) In agronomy ..... acres. Size of plats.....
Showing what?.....
(*b*) In horticulture ..... acres. Size of plats.....
Showing what?.....
(*c*) In soils and fertilizers work ..... acres. Size of plats.....
Showing what?.....
(*d*) ..... acres. Size of plats.....
(Add other work.)
Showing what?.....
(*e*) ..... acres. Size of plats.....
(Additional work.)
(*f*) What uses are made of remainder of farm not devoted to demonstration or experimental plat work?.....

10. What demonstration work is being done by agricultural school on other farms privately owned?.....
(*a*) In planning farm (starting rotations, etc.): Number of farms.....
(*b*) In conducting demonstration plats on farms: Number .....
(a) Showing what?.....
(*c*) In supervising live-stock breeding on farms: Number.....
(*d*) In actual management of farms: Number.....
(*e*) In keeping accounts of entire farms: Number .....
(*f*) In advising in management of farms: Number .....
(*g*) In sending out circulars regarding farms: Number .....
(*h*) Any other work.....
(*i*) Any other work.....
(*j*) Any other work.....

11. What distinctly experimental work is being done on the agricultural school farm?
(*a*) In agronomy, state projects.....
(*b*) In horticulture, state projects.....
(*c*) In soils and fertilizers.....
(*d*) In any other work.....
(*e*) .....
(Any other.)

12. Total annual appropriation for farm work .....
(*a*) Total annual appropriation for school work .....
Or, total annual appropriation for farm and school work .....
13. Is the school a separate institution? ..... Unit of area .....
(*a*) Is it a part of the State agricultural college?.....
14. Does the agricultural school own stock? ..... If so, number of head of each kind.....
15. Remarks.....
.....
16. Blank filled out by.....

○

UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1913, NO. 15 - - - - - - WHOLE NUMBER 523

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

COMPILED BY THE LIBRARY DIVISION OF THE BUREAU OF EDUCATION, UNDER THE DIRECTION OF JOHN D. WOLCOTT, ACTING LIBRARIAN

MAY, 1913

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

INTRODUCTORY NOTES.

Recent publications of special interest may be mentioned as follows: Sutton, Problems in modern education; Stevens, Guide to the Montessori method; Betts, New ideals in rural schools; Coffman, Mobility of teaching population; Felmley, New normal school movement; Sanders, Professional work in State normal schools; Carnegie foundation, Seventh annual report; Cattell, University control; Woodbridge, Present status of degree of Ph. D.; Strayer, Educational administration; Gray, Variations in grade of high-school pupils; Bancroft, Posture of school children; Monroe, Human interrelationship and education; Ward, Social center; Dewey, Industrial education and democracy.

The committee on school inquiry of the board of estimate and apportionment of the city of New York has recently issued the following reports:

Part II, Subdivision I. Elementary schools. Section F.—Problems in elementary school organization and administration. I. Intermediate schools. By Frank P. Bachman. v, 43 p.

Part II, Subdivision III. High schools. Section A.—"Courses" (programs) of study, except commercial courses. By Calvin O. Davis. xii, 76 p.

Of the publications listed in this bulletin, only those named in the section headed "Bureau of Education: Recent publications" are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or in the case of an association publication, from the secretary of the issuing organization.

A directory of the periodicals indexed in the following pages may be found at the end of this bulletin.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PUBLICATIONS OF ASSOCIATIONS.

625. **Arkansas state teachers' association.** Proceedings of the forty-fifth annual session. . . . Little Rock, December 26th, 27th, and 28th, 1912. Little Rock, H. G. Pugh printing company, 1912. 265 p. 8°. (J. L. Bond, corresponding secretary, Little Rock, Ark.)

Contains: 1. J. P. Womack: Call of the country, p. 32–43. 2. O. H. Benson: Education for farm and home, p. 52–64. 3. G. B. Cook: Rejuvenation of the rural community, p. 70–77. 4.

E. E. Morris: Right functioning of the college of today, p. 90–95. 5. F. H. Harrin: Have the normal training schools made good? What should be the policy of the state toward these schools in the future? p. 102–107. 6. J. M. Paul: The study of current events in the high school, p. 123–25. 7. S. C. Swearingen: Standards of efficiency in our schools; the need for such standards, and a suggested plan for working them out, p. 132–34. 8. H. A. Woodward: The savings bank in a high school, p. 135–38. 9. C. W. Garrison: Rural school sanitation, p. 155–58. 10. C. E. Womack: Rural school sanitation, p. 159–61. 11. A. M. Harding: Practical course in arithmetic for the high school, p. 187–91.

626. **Music teachers' national association.** Papers and proceedings . . . at its thirty-fourth annual meeting, Vassar college, Poughkeepsie, N. Y., December 30, 1912, to January 2, 1913. Hartford, Conn., 1913. 211 p. 8°. (J. L. Erb, secretary, Wooster, Ohio)

Contains: 1. G. C. Gow: The teacher and his material, p. 49–59. 2. J. L. Erb: The college conservatory of music, p. 60–69. 3. H. C. Macdougall: The training of the composer, p. 80–90. 4. O. A. Mansfield: The teaching of musical composition, p. 91–98. 5. Julia E. Crane: The relation of the professional musician to school music, p. 101–109. 6. L. B. McWhood: College calls, p. 140–44. 7. E. M. Bowman: History of the organization of the American college of musicians, p. 145–55. 8. C. H. Mills: The history of music degrees, p. 159–70.

627. **Ohio college association.** Transactions of the forty-third annual meeting, held at Columbus, Ohio, December 27 and 28, 1912. [The Association, 1913] 114 p. 8°. (E. A. Miller, secretary, Oberlin college, Oberlin, Ohio)

Contains: 1. Report of Committee on cooperation, including brief statement from each college of important changes in polity or practice, p. 9–10, 17–51. 2. E. E. Lincoln: The meaning of Oxford to the United States and the possibilities of the Rhodes scholarship scheme, p. 64–82. 3. E. E. Phillips: Bergson's theory of knowledge, p. 83–90. 4. W. L. Gard: The bearing of recent interpretations of formal discipline upon educational doctrine and practice, p. 90–99.

628. **Ohio state association of school board members.** Proceedings of the meeting held in Columbus, Ohio, 1913. Ohio teacher, 33 : 354–66, 373–76, March 1913.

Contains: 1. J. F. Orr: How to run the schools without money, p. 354–59. 2. D. C. Westenhaver: The increase of school expenditures and the causes thereof, p. 359–63. 3. F. W. Miller: The cost of public education, p. 364–66. 4. John Davison: The inter-relations of boards of education, superintendents, teachers and constituency, p. 373–76.

629. **Pennsylvania state educational association. School directors' department.** Proceedings of eighteenth annual session, at Harrisburg, February 6 and 7, 1913. Pennsylvania school journal, 61 : 375–412, March 1913.

Contains: 1. N. C. Schaeffer: [School revenue] p. 379–81. 2. Dr. Royer: Some results of medical inspection, p. 381–82. 3. A. D. Yocum: Tests of efficiency of the school system, p. 382–83. 4. M. G. Brumbaugh: A state school fund, p. 383–87. 5. M. T. Tredway: Progressive movement in education, p. 387–91. 6. P. P. Claxton: [Training in the schools] p. 391–94. 7. W. E. Runger: The public's children and civic experience, p. 394–97. 8. Samuel Hamilton: The physical square deal and the cigarette habit among boys, p. 398–402. 9. E. S. Brownmiller: The evolution of education, p. 402–406.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

630. Present standards of higher education in the United States, by George Edwin MacLean. Washington, 1913. 191 p. (Bulletin, 1913, no. 4)

631. Agricultural instruction in high schools, by C. H. Robison and F. B. Jenks. Washington, 1913. 80 p. (Bulletin, 1913, no. 6)

632. Status of rural education in the United States, by A. C. Monahan. Washington, 1913. 72 p. illus. (Bulletin, 1913, no. 8)

633. Consular reports on continuation schools in Prussia. Washington, 1913. 30 p. (Bulletin, 1913, no. 9)

634. Promotion of peace, comp. by Fannie Fern Andrews. Washington, 1913. 66 p. (Bulletin, 1913, no. 12)

Contains: I. Suggestions for the observance of Peace day (May 18) in schools. II. Agencies and associations for peace.

BOOKS, PAMPHLETS, PERIODICAL ARTICLES.

EDUCATIONAL HISTORY.

635. **Brasier, Léon.** Histoire des maisons d'éducation de la légion d'honneur 2. éd. Paris, Librairie Renouard [1912?] 283 p. illus. 4°.

636. **Lemenestrel, Charles.** L'instruction en France date-t-elle de la révolution? Paris, H. Champion, 1912. 304 p. 12°.

Undertakes to show that the present educational system of France is the product of a long course of development, extending from the earliest periods of French history.

EDUCATIONAL BIOGRAPHY.

637. **Baldwin, Bird T.** John Locke's contribution to education. Sewanee review, 21 : 177–87, April 1913.

Writer calls attention "to a new interpretation of John Locke's views on education, by emphasizing the fact that his educational writings, like his philosophical contributions, characterize him essentially as a pioneer in certain aspects in this field of work."

638. **Draper, William Henry.** Sir Nathan Bodington, first vice-chancellor of the University of Leeds. London, Macmillan and co., limited, 1912. xii, 256 p. front. (port.) 8°.

639. **Drtina, François.** L'idée humanitaire dans l'œuvre et dans la vie de Jean Amos Coménius. Revue internationale de l'enseignement, 65 : 125–133, February 1913.

640. **Giraud, Jean.** Un inspecteur général d'il y a cent ans; les idées pédagogiques et administratives de Joubert. Revue universitaire, 22 : 230–37, March 1913.

To be continued.

641. **Gros, J.** Lakanal et l'éducation nationale. Paris, E. André fils, 1912. 212 p. 12°.

642. Jean-Jacques Rousseau; leçons faites à l'École des hautes études sociales, par MM. F. Baldensperger, G. Beaulavon, I. Benrubi, C. Bouglé, A. Cahen, V. Delbos, G. Dwelshauvers, G. Gastinel, D. Mornet, D. Parodi, F. Vial. Paris, F. Alcan, 1912. 303 p. 8°. (*On cover:* Bibliothèque générale des sciences sociales . . . XLIII)

643. **Rubio, Federico.** Mis maestros y mi educación; memorias de niñez y juventud. Obra póstuma e inéd. . . . Publicala su hija. Prólogo por el Doctor Luis Marco. Madrid, V. Tordesillas, 1912. 456 p. 4°.

PRESENT SITUATION.

644. **Galli, Maria.** L'istruzione elementare e popolare in Scandinavia. Rivista pedagogica, 6 : 197–214, March 1913.

645. **Harferding,** *Mrs.* **Janet.** Schools at Gary, Indiana. Nebraska teacher, 15 : 399–400, March 1913.

Continued from the February number.

646. **Koeppel, George.** Observations concerning the organization of schools and certain phases of educational work in Germany. IV. Elementary school teacher, 13: 346–52, March 1913.

Conclusion of a series of articles on German education. This paper treats of trade schools and physical training.

647. **Raphaël, Gaston.** L'école de l'avenir. Revue pédagogique, 62 : 225–35, March 1913.

A discussion of the educational situation in Germany, especially in reference to the ideas for reform promulgated by the Goethebund.

648. [Sheffield] Lord Haldane and the prospects of educational reform. Contemporary review, 103 : 305–14, April 1913.

Contrasts the English and Scotch systems of schools. Advocates the systematic development of physical education and training.

649. **Weill, Louis.** Les assistants étrangers. Revue universitaire, 22 : 207–9, March 1913.

A criticism of the attitude of the French teachers toward foreign students visiting the schools.

650. **Williams, A. M.** Education; a survey of tendencies. Glasgow, J. Maclehose and sons, 1912. 225 p. fold. chart. 8°.

PEDAGOGICS AND DIDACTICS.

651. **Bourne, Randolph S.** Youth and life. Boston and New York, Houghton Mifflin company, 1913. 363 p. 8°.

CONTENTS: 1. Youth. 2. The two generations. 3. The virtues and the seasons of life. 4. The life of irony. 5. The excitement of friendship. 6. The adventure of life. 7. Some thoughts on religion. 8. The mystic turned radical. 9. Seeing, we see not. 10. The experimental life. 11. The dodging of pressures. 12. For radicals. 13. The college: an inner view. 14. A philosophy of handicap.

652. **Chancellor, William Estabrook.** Better school teaching. Educational foundations, 24 : 454–64, April 1913.

This begins a series of articles by Dr. Chancellor on an interesting subject to educational workers, "Better school teaching." Each article will be abundantly worth reading for its own sake. The series as a whole will constitute a document of great importance.—From Editorial.

653. **Grunder, Fr.** La province pédagogique de Goethe et les principes des écoles nouvelles. Minerva, 5 : 76–81, March 1913.

654. **John, F.** Individuale und soziale erziehung. Frauenbildung, 12 : 136–42, heft 3, 1913.

Discusses the work of Gaudig, Foerster, and Kerschensteiner as representative of the diverging individualistic and socialistic forces in education and attempts to reconcile them.

655. **Lane, Winthrop D.** Teaching what the twentieth century wants. Survey, 29 : 867–69, March 22, 1913.

Discusses the proposed work of the Committee on school efficiency, appointed by the National council of education, at its meeting in February 1913. The author describes it as "a thoroughly revolutionary step in education, from the standpoint of social workers." "The Committee was appointed to give head and guidance to the growing demand for investigating schools and testing the efficiency of school systems." In discussing the projected work, Prof. Suzzallo said: "The greatest waste in education is not in bad teaching, but in teaching things that the twentieth century does not want."

656. **Luzuriaga, Lorenzo.** Direcciones actuales de la pedagogia en Alemania. Madrid [etc.] Libreria nacional y extranjera [1912] 165 p. 8°

657. **Moore, Ernest C.** Education at the meeting of the British Association. Educational review, 45 : 345–61, April 1913.

An important report rendered was the influence of school books upon eyesight. Standardizing of type used in text-books was recommended. An exhaustive report was also submitted on the mental and physical factors involved in education.

658. **Münch, Wilhelm.** Zum deutschen kultur- und bildungsleben. Fünfte sammlung vermischter aufsätze. Berlin, Weidmannsche buchhandlung, 1912. 338 p. 8°.

659. **Rein, W.** Die nationale einheitsschule. Pädagogische warte, 20 : 306–11, March 15, 1913.

States the demand for the national *Einheitsschule* for Germany and gives graphic illustrations of proposals. To be continued.

660. **Schulze, R.** Experimental psychology and pedagogy for teachers, normal colleges, and universities . . . tr. by Rudolf Pintner. New York, The Macmillan company, 1912. 264 p. illus. 8°.

661. **Smith, Preserved.** The unity of knowledge and the curriculum. Educational review, 45 : 339–44, April 1913.

Author thinks that much of "the unreality, unpracticality and lack of inspiration charged not altogether unjustly against our academic instruction, is due to a want of coordination in the studies, to the disconnected way in which fragmentary information is imparted in the divers arts and sciences."

662. **Sutton, William Seneca.** Problems in modern education. Addresses and essays. Boston, Sherman, French & company, 1913. 257 p. 8°.

CONTENTS: 1. Attitude of the man of science toward educational criticism. 2. Some contributions of the nineteenth century to educational progress. 3. Herbert Spencer's individuality as manifested in his educational thinking. 4. Determining factors of the curriculum of the secondary school. 5. Unification of college degrees. 6. Organization of the department of education in colleges and universities. 7. Contributions of William T. Harris to the development of education in America. 8. The club woman and the development of educational public opinion. 9. Education of the modern woman. 10. Significance of Christian education in the twentieth century. 11. Some fundamental educational principles applied to the work of the Sunday school. 12. Education of the Southern negro.

663. **Weeks, Arland D.** Wanted—a theory of education. Education, 33 : 463–72, April 1913.

Writer says that "the bewilderment as to educational aims results largely from the shift from an individual to a social viewpoint." Discusses vocational education. "Here is the dilemma—how train for industries without producing undemocratic conditions? . . . It is unpleasant to think of the schools playing into the hands of exploiters of labor or becoming untrue to the tradition of equal opportunities."

664. **Wetzel, William A.** The old and the new systems of education—a contrast. Education, 33 : 503–12, April 1913.

Makes a plea for more individual instruction. The city school of the future must become a stronger social force.

665. **Yocum, Albert Duncan.** Culture, discipline and democracy. Philadelphia, Christopher Sower company, 1913. 320 p. 12°.

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

666. **Biervliet, Jules Jean.** Esquisse d'une éducation de l'attention. Paris, F. Alcan; [etc., etc., 1913] 137 p. 12°.

667. **Braunschvig, Marcel** *and* **Braunschvig, G.** Notre enfant; journal d'un père et d'une mère. Paris, Hachette et cie, 1913. 264 p. 12°.

668. **Bruce, H. Addington.** The home training of children. Outlook, 103 : 724–29, March 1913.

Discusses among other things Karl Witte's education of his son.

669. **Colvin, Stephen Sheldon** *and* **Bagley, William Chandler.** Human behavior; a first book in psychology for teachers. New York, The Macmillan company, 1913. 336 p. illus. 12°.

670. **Courtis, S. A.** The reliability of single measurements with standard tests. Elementary school teacher, 13 : 326–45, March 1913.

A criticism of a recent article, published in the Elementary school teacher, giving the results and conclusions of "a study of the reliability of single measurements in the derivation of standard scores in adding." The original tests were made on 270 eighth-grade children in the eight larger grammar schools of San Jose, Cal.

671. **G., H.** L'enseignement de la mémoire. Éducateur moderne, 8 : 116–20, March 1913.

672. **Magnusson, P. M.** Psychology as applied to education. Boston, New York [etc.] Silver Burdett and company [1913] 345 p. 8°.

673. **Pringel, L.** Beitrag zur geistigen entwicklung eines dreijährigen knaben. Zeitschrift für kinderforschung, 18 : 264–71, March 1913.

Interestingly intimate description of a real three-year old boy's mental development.

674. **Radosavljevich, Paul R.** The problem of habit formation. American schoolmaster, 6 : 155–63, April 1913.

675. **Terman, Lewis M.** *and* **Hocking, Adeline.** The sleep of school children: its distribution according to age, and its relation to physical and mental efficiency. Journal of educational psychology, 4 : 138–47, March 1913.
"This is the first of a series of three articles in which the authors report the results of extended experimental and statistical studies on the sleep of school children."

SPECIAL METHODS OF INSTRUCTION.

676. **Brown, Robert M.** The blackboard calendar. Elementary school teacher, 13 : 371–78, April 1913.
A device for teaching the rudimentary lessons in the science of the weather.

677. **Coe, Fanny E.** The second book of stories for the story-teller. Boston, New York [etc.] Houghton Mifflin company [1913] xiv, 209 p. 12°.
Designed for service to second-grade teachers, busy mothers, and social workers.

678. **Wright, Herbert F.** Moving pictures in the schools. Catholic educational review, 5 : 314–21, April 1913.
Gives arguments against introducing moving pictures into schools.

SPECIAL SUBJECTS OF CURRICULUM.

679. **Bate, Robert Shelton.** The teaching of English literature in secondary schools. London, G. Bell and sons, ltd., 1913. 177 p. 12°.

680. **Bredvold, Louis I.** Suggestions for reconstruction in high school English. Education, 33 : 492–98, April 1913.
Says that the work in English must be thoroughly humanized.

681. **Clark, Bertha May.** Living versus dead biology. School review, 21 : 250–53, April 1913.

682. **Cooley, Alice Woodworth.** Language teaching in the grades. Boston, New York [etc.] Houghton Mifflin company [1913] viii, 88 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)
CONTENTS: 1. The principles of language teaching. 2. The use of literature as the basis of language teaching. 3. Some practical suggestions in the use of literature for language training. 4. The group plan of cooperative lesson units. 5. Training to habitual use of correct forms. 6. The use of textbooks.

683. English equipment. English journal, 2 : 178–84, March 1913.
"A report presented to the National council of teachers of English, November 30, 1912."

684. **Farnsworth, Charles H.** The preparation of the music supervisor. School music, 14 : 25–30, March–April 1913.
"To sum up the training of the supervisor; we find that it consists of four large groups of subjects. First, those pertaining to general education, second, those pertaining to teaching in general, third, those dealing with the profession of the musician, and fourth, those dealing with the profession of the music teacher and supervisor."

685. **Genthe, K. W.** Das system der höheren schulen Americas und der biologische unterricht. Monatshefte für den naturwissenschaftlichen unterricht, 6 : 145–61, heft 3, 1913.
Continued article. In this section the author proceeds from the general description of American educational conditions to the specific description of biology instruction. Quotes many American opinions and gives typical outlines. Remarks particularly upon American emphasis of nature study.

686. **Hartwell, Ernest C.** The teaching of history. Boston, New York [etc.] Houghton Mifflin company [1913] viii, 71 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)
A guide for history teachers of the high school and the upper grammar grades.

687. **Heath, W. R.** The demands of the business world for good English. English journal, 2 : 171–77, March 1913.
"A paper read at the meeting of the New York State association of teachers of English at Buffalo, November 26, 1912."

688. **Lugg, Charles H.** The school's responsibility. South Dakota educator, 26 : 11–14, March 1913.
Deals with temperance instruction.

689. **Mackinder, H. J.** The teaching of geography and history as a combined subject. Geographical teacher, 7 : 4–9, Spring 1913.
Discussion, p. 9–19.
This paper was read and discussed at the annual meeting of the Geographical society held at the University of London January 9, 1913.

690. **Magni, John A.** The decline of the classics and their place in future curricula. Pedagogical seminary, 20 : 23–44, March 1913.

691. **Paine, Cassie L.** A strong motivation for arithmetic work. Elementary school teacher, 13 : 379–86, April 1913.
Describes work of twelve sixth-grade children, who were allowed to study in a group by themselves. They were not defective mentally, but were somewhat slow and indolent.

692. **Purin, C. M.** Die direkte methode beim modernsprachlichen unterricht. Monatshefte für deutsche sprache und pädagogik, 14 : 78–83, March 1913.
The writer, a partisan of the direct method in language instruction, laments the unwillingness of American teachers to accept it. Answers vigorously various objections urged to the direct method.

693. **Rapeer, Louis W.** The problem of formal grammar in elementary education. Journal of educational psychology, 4 : 125–37, March 1913.
"An experimental study which raises grave doubts as to the value of instruction in grammar in the elementary grades."

694. **Read, C. C.** A high school Latin course for high school pupils. Virginia journal of education, 6 : 252–58, March 1913.
Read before the Classical association of Virginia, November 1912.

695. **Rowell, Percy E.** The status of science teaching in the elementary schools of the United States. Elementary school teacher, 13 : 387–404, April 1913.
Writer says that instruction in general science, and in the methods of teaching such in the grades, should be given in every normal school of the country.

696. **Ryan, John.** A school wireless station. Irish educational review, 6 : 321–28, March 1913.
A brief account of the practical work connected with setting up a wireless station in a college.

697. **Skinner, Hilda M.** Needlework in relation to character. School world, 15: 124–26, April 1913.

698. **Snow, William B.** Modern languages in American public schools. Educational review, 45: 362–75, April 1913.
Argues for better-prepared and better-paid teachers.

699. **Zidler, Gustave.** L'enseignement du français par le latin. Paris, Vuibert; Montreal, Beauchemin [1912] 40 p. 8°.
Mémoire présenté au Premier congrès de la langue française en Amérique,—Québec, 1912.

KINDERGARTEN AND PRIMARY SCHOOL.

700. **Black, Mae Virginia.** Phases of the Montessori system of teaching. Pennsylvania school journal, 61: 427–33, March 1913.
Address delivered before the Child study round table of the Pennsylvania state educational association, December 27, 1912.

701. **Boone, Richard Gause.** The Montessori method. Sierra educational news, 9: 270–79, April 1913.
Continued from February issue.

702. **Hardy, Lileen.** The diary of a free kindergarten. With an introduction by Kate Douglas Wiggin. Boston and New York, Houghton Mifflin company, 1913. 175 p. illus. 12°.

703. **Morgan, S. A.** The Montessori method. An exposition and criticism. Toronto, L. K. Cameron, 1913. 72 p. illus. 8°. (Ontario department of education. Bulletin no. 1, 1912)

Contains numerous illustrations, some taken from the American translation of Dr. Montessori's work, and others furnished by the House of childhood of New York, the firm which manufactures the didactic apparatus.

Dr. Morgan, the author of this publication, is principal of the Normal school at Hamilton, Ontario, and an experienced teacher of psychology.

704. **Murray, E. R.** A story of infant schools and kindergartens. London, Bath and New York, Sir I. Pitman & sons, ltd. [1913] ix, 145 p. 12°

705. **Stevens, Ellen Yale.** A guide to the Montessori method. New York, F. A. Stokes company, 1913. xii, 240 p. illus. 12°.

RURAL EDUCATION.

706. **Betts, George Herbert.** New ideals in rural schools. Boston, New York [etc.] Houghton Mifflin company [1913] x, 128 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)

CONTENTS: 1. The rural school and its problem. 2. Social organization of the rural school. 3. Curriculum of the rural school. 4. Teaching of the rural school.

Written from the point of view of the local community immediately related to, and concerned with, the rural school; and consequently emphasizes the things that ought to be done by the local authorities—parent, trustee, and teacher.

707. **Brown, C. J.** Grade limitation for one-room schools. School news and practical educator, 26:329–30, 367–68, March, April 1913.

The author is the state supervisor of rural schools of Louisiana.

708. **Copeland, A. B.** County administration of rural schools. Colorado school journal, 28:17–18, March 1913.

709. **Lawrence, Frances E.** The daily program in a large rural school. South Dakota educator, 26:21–24, April 1913.

710. **Schwering, Benjamin.** Consolidation of country schools. Progressive teacher, 19:33–35, April 1913.

Gives the advantages of the consolidated school, taking as examples the John Swaney school of Putnam county, Illinois, and the Lee's Creek school of Lee's Creek, Ohio.

711. **Stewart, Joseph S.** A plan for the small rural or village high school. High school quarterly, 1:133–35, April 1913.

Gives a suggestive course of study.

712. What the leaders are saying about county supervision. A symposium. Texas school magazine, 15:13–14, March 1913.

SECONDARY EDUCATION.

713. **Aiton, George B.** Minnesota high school situation. Journal of education, 77:381, April 3, 1913.

"This survey of the high school situation by State Superintendent Aiton of Minnesota is from his annual report recently given out—a report which is full of suggestion and significant statistics."—Ed.

714. **Rapeer, Louis W.** The secondary school teachers of Prussia. Education, 33:478–87, April 1913.

715. **Wheeler, George.** The six-year high school. School review, 21:239–45, April 1913.

Writer thinks there is "a rather strong drift toward an ultimate settling upon a six-year elementary school course, followed by a six-year high school course, but with the latter divided into two rather distinct periods of three years each." Summarizes the advantages of the 6–3–3 plan.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

716. **Blessing, C. W.** Essential qualifications of a teacher. American education, 16:328–31, March 1913.

717. **Boyden, Albert Gardner.** The teacher in modern life. Bridgewater, Mass., A. H. Willis, printer, 1913. 287, v p. 8°.

"The purpose of this volume is to set forth in brief topical outline the scope and aim of the work of the modern teacher, how he is to prepare himself for his great work, and how he is to come into the skillful practice of his art."—Pref.

718. **Brittain, M. L.** System of certification for Georgia teachers adopted by the State board of education. High school quarterly, 1:174–78, April 1913.

719. **Coffman, Lotus D.** Mobility of teaching population in relation to economy of time. School and home education, 32:292–96, April 1913.

Paper read before Department of superintendence, Philadelphia, February 28, 1913.

720. **Felmley, David.** The new normal school movement. Educational review, 45:409–15, April 1913.

Writer says that high school teachers should be trained in the same environment as elementary teachers.

721. **Jones, H. Bedford.** The personal influence of the teacher. Education, 33:499–502, April 1913.

722. **Robertson, C. B.** The training of secondary school teachers. School review, 21:225–34, April 1913.

Presents a scheme for solving the problem of furnishing practice teaching for secondary teachers in training.

723. **Sanders, W. H.** A study of professional work as presented in the state normal schools of the United States. Pedagogical seminary, 20:48–55, March 1913.

"Data upon which this discussion is based were obtained by a questionnaire sent to all the state normal schools in the United States."

HIGHER EDUCATION.

724. **Armstrong, A. C.** German culture and the universities. Educational review, 45:325–38, April 1913.

Writer says that the German universities constitute "a principal bulwark of ideal culture in our age." But this does not mean that they have failed to profit by the material progress of the day.

725. **Canby, Henry Seidel.** The professor. Harper's magazine, 126:782–87, April 1913.

A character study of the modern college professor.

726. **Carnegie foundation for the advancement of teaching.** Seventh annual report of the president and of the treasurer. New York city, October 1912. 194 p. 4°.

Contains: Part I. The business of the year. Part II. Current educational problems, including College entrance requirements, Admission to advanced standing, Medical progress, University and college financial reporting, Advertising as a factor in education, Education and politics, Sham universities.

727. **Cattell, J. McKeen.** University control. New York and Garrison, N. Y., The Science press, 1913. 484 p. 8°.

Includes a series of 299 unsigned letters by leading men of science holding academic positions, and articles by Joseph Jastrow of the University of Wisconsin, George T. Ladd of Yale university, John J. Stevenson of New York university, J. E. Creighton of Cornell university, J. McKeen Cattell of Columbia university, George M. Stratton of the University of California, Stewart Paton of Princeton, John Jay Chapman of New York, James P. Munroe of Boston, and Jacob Gould Schurman of Cornell university.

728. **Fuld, Leonhard Felix.** Kings college alumni. New York, 1913. 66 p. ports. 8°.

Reprinted from Columbia university quarterly. Contains biographical sketches of alumni from the class of 1758 to that of 1776 inclusive.

729. **Gerrans, H. T.** Oxford university finance. Educational review, 45:376–87, April 1913.

Shows the sources of the incomes of the University and of the colleges, and the powers which they possess of dealing with their revenues.

730. **Homan, Fletcher.** The sphere of the independent college or university. Oregon teachers monthly, 17:393–95, March 1913.

Address delivered before the Oregon state teachers' association at Portland, in December, 1912

731. **Lasserre, Pierre.** La doctrine officielle de l'université. Critique du haut enseignement de l'état. Défense et théorie des humanités classiques. 3. ed. Paris, Mercure de France, 1913. 506 p. 12°.

732. **Lovejoy, Arthur O.** The metamorphosis of the Carnegie foundation. Science, n. s. 37:546–52, April 11, 1913.

Criticises the pension scheme of the Carnegie foundation for the advancement of teaching.

733. **Morris, Edward P.** The college and the intellectual life. Yale review, 2:456–69, April 1913.

734. **Schiller, F. C. S.** Oxford and the working man. Fortnightly review, 93: 766–78, April 1913.

Meets objections raised against the university by the working classes.

735. **Stevenson, John J.** Some random thoughts concerning college conditions. Popular science monthly, 82 : 397–411, April 1913.

Author says that "the college authorities should demand less in mass but more of thoroughness from the preparatory schools." Argues that there should be a "definite legal determination as to the meaning of the term 'college.'" Advocates the repealing of the charters of many schools which have the power to grant degrees.

736. **Stockbridge, Frank P.** A university that runs a state. World's work, 25 : 699–708, April 1913.

Work of the Wisconsin State University. "Brings exact scientific information and its application, not only to the affairs of the individual, but to those of the whole community."

737. **Waterlow, Sydney Philip Perigal,** *ed.* In praise of Cambridge; an anthology in prose and verse. London, Constable and company, ltd., 1912. 221 p. 8°.

738. **Woodbridge, Frederick J. E.** The present status of the degree of doctor of philosophy in American universities. Columbia university quarterly, 15 : 126–32, March 1913.

"Paper read at the fourteenth annual meeting of the Association of American universities Philadelphia, Pa., November 7–9, 1912."

SCHOOL ADMINISTRATION.

739. **Barrett, S. M.** Efficient supervision. Oklahoma school herald, 21: 13–16, March 1913.

Gives four principles of school supervision.

740. **Chancellor, William Estabrook.** The New York school inquiry. School journal, 80 : 166–70, March 1913.

741. **Elliott, Edward C.** The report of the New York school inquiry: the system of general supervision and the board of examiners. Elementary school teacher, 13 : 320–25, March 1913.
A general résumé without criticism.

742. **Ellis, Alston.** Better financial support of the public schools. Ohio teacher, 33 : 366–72, March 1913.
"A paper read before the Ohio school improvement federation, Columbus, Ohio, December 27 1912."

743. **M., H.** Zur reorganization der Basler volksschule. Schweizerische lehrerzeitung, 58 : 81–83, March 1, 1913.
Discusses the proposal to detach the fifth and sixth school years from the *Sekundarschule* and assign them to the *Primarschule*.

744. **Nudd, Howard W.** A description of the Bureau of compulsory education of the city of Philadelphia, showing how its organization and administration bear upon the problems of compulsory education in the city of New York. New York, Public education association of the city of New York, 1913. 62 p. 8°.

745. **Pritchett, Henry S.** A pension system for public schools. Independent, 74 : 617–21, March 20, 1913.
Writer discusses the desirability of pensions for public school teachers, and outlines a feasible plan for state action.

746. **Redway, Jacques W.** Knocking the New York city schools. Journal of education, 77 : 371–72, April 3, 1913.

747. **Sinclair, William M.** What is wise economy in school administration. Wyoming school journal, 9 : 173–79, March 1913.

748. **Strayer, George Drayton** *and* **Thorndike, Edward L.** Educational administration. Quantitative studies. New York, The Macmillan company, 1913. xii, 391 p. 8°.
CONTENTS: Part I, Studies of the students. Part II, Studies of the teaching staff. Part III, Studies of the organization of schools and courses of study. Part IV, Means of measuring educational products. Part V, School finance.
"The selections quoted or summarized in this volume are deliberately chosen from the work that has been done at Teachers college, Columbia university, in the application of quantitative methods to administrative problems."—Pref.

SCHOOL MANAGEMENT.

749. **Barker, James F.** A home-room plan. School review, 21:235–38, April 1913.
Adoption of the plan, says the writer, fosters the growth of school spirit, in place of class spirit, and serves to increase control in all school activities.

750. **Downing, Elliot R.** A study of an attempt at uniformity in grading students. School science and mathematics, 13:290–93, April 1913.
Gives the results of an investigation at the Northern state normal school of Michigan to determine what degree of uniformity there was in the various departments in grading the students.

751. **Garrett, T. H.** A longer school day. High school quarterly, 1:149–51, April 1913.
The author believes that we shall eventually have to come to a double daily session of seven hours.

752. **Gayler, G. W.** Elimination from a different angle. Psychological clinic, 7:11–16, March 15, 1913.
Gives specific and helpful plans for holding children in school, as carried out in Canton, Ill.

753. **Gray, Clarence Truman.** Variations in the grades of high school pupils. Baltimore, Warwick & York, 1913. 120 p. 12°. (Educational psychology monographs, ed. by G. M. Whipple. no. 8)

Mr. Gray's "work should interest all teachers and more particularly all school administrators, because he not only shows clearly how unreliable are the grades commonly given by teachers and makes evident the need of instruction and training in grading, but also presents a relatively simple method by means of which any high-school principal can study the condition of the grading in his own school."—Editor's pref.

754. **McBee, Percy C.** Bridging the gap. West Virginia school journal, 42:10–12, April 1913.

Mentions four difficulties in bridging the gap between the eighth grade and the high school, and suggests ways in which these difficulties may be removed or lessened.

755. **Starch, Daniel** *and* **Elliott, Edward C.** Reliability of grading work in mathematics. School review, 21:254–59, April 1913.

Investigation with a geometry paper, written as a final examination by a pupil in one of the largest high schools in Wisconsin.

SCHOOL ARCHITECTURE.

756. **Cheney, Charles Henry.** The Oakland school building inquiry. American school board journal, 46:9–11, 56, April 1913.

To be concluded in the May issue.

"The first comprehensive study of the problems of school architecture, as applied to an important city, by an expert commission representing the widely differing view points of school administrator, supervisor, teacher, architect, sanitary engineer, and sociologist was made recently in Oakland, Cal. The very interesting conclusions arrived at by the Oakland commission and the important standards evolved by them are here summarized by an experienced architect and published for the first time."—Editor's note.

757. **Dunlop, John Y.** Primary schools in Scotland. American school board journal, 46:17–19, 58–59, April 1913.

"While the United States has made wonderful progress in the design and construction of schoolhouses, we can learn much from the European countries. Most suggestive for American architects and educators are some of the standards of school architecture adopted by the Scottish Education board. How these standards are embodied in typical elementary schools is here interestingly described by a leading architect."—Editor.

758. **Sturgis, R. Clipston.** The schoolhouse department of Boston, Mass. American school board journal, 46:12–13, 57–58, April 1913.

"How shall cities select architects for new schoolhouses and how shall the construction of these buildings be controlled. Mr. R. Clipston Sturgis presents Boston's most suggestive reply to this question. The opinions and conclusions of the author are of more than current value because of his service on the Boston board of schoolhouse commissioners and of his very wide observations as a schoolhouse architect."—Editor.

SCHOOL SANITATION AND HYGIENE.

759. **Bancroft, Jessie H.** The posture of school children, with its home hygiene and new efficiency methods for school training. New York, The Macmillan company, 1913. xii, 327 p. illus. 8°.

The term "posture" is used in this book to denote the habitual carriage of the body, especially in the erect position.

760. **Brandenburg, W. A.** Sanitation and health in rural schools. Oklahoma school herald, 21:10–12, April 1913.

Criticises the sanitation in rural schools and suggests remedies for bettering it.

761. **Gould, George M.** Saving the backward school child. Journal of the American medical association, 60:1059–60, April 5, 1913.

Discusses eye troubles. Estimates that there are about 78,000 children with defective vision in the public schools of New York city.

762. **Harris, G. A.** School sanitation. Wyoming school journal, 9 : 179–83, March 1913.
"Read before the teachers at the Big Horn county teachers' institute."

763. **Nietner, T. A. J.** Die bekämpfung der tuberkulose unter den schulkindern Pädagogische warte, 20 : 311–18, March 15, 1913.
A review of German progress of the last few years in combatting tuberculosis among schoolchildren.

764. **Putnam, Helen C.** School janitors, mothers and health. Easton, Pa., American academy of medicine press [1913] 201 p. 12°.

765. School-books in relation to eyesight. School world, 15: 85–88, March 1913.

766. **Winder, Phyllis D.** The public feeding of elementary school children. London, New York [etc.] Longmans, Green and co., 1913. 84 p. 8°. (Birmingham studies in social economics and adjacent fields . . . II)

SEX HYGIENE.

767. **Bigelow, Maurice A.** Sex-instruction. Sex-instruction as a phase of social education. Religious education, 8: 11–22, April 1913.

768. **Foerster, Friedrich Wilhelm.** Marriage and the sex-problem . . . tr. by Meyrick Booth. New York, F. A. Stokes company [1912] 228 p. 12°.

769. **Pedersen, Victor Cox.** Sex hygiene in the public schools. Reasons why children, girls in particular, should be taught these subjects in the class-room. Good housekeeping, 56 : 532–34, April 1913.
"This sane and helpful talk was inspired by a mother's article in the September issue of this magazine, protesting against instruction in sex hygiene in the public schools."
Author says: "To teach sexology to the exclusion of parental direction is a mistake."

PLAY AND PLAYGROUNDS.

770. **Kastman, Valborg** *and* **Köhler, Greta.** Swedish song games; a collection of games and songs for school, home, and playground use. Boston, New York [etc.] Ginn and company [1913] vii, 95 p. front., plates, diagrs. 12°.

SOCIAL ASPECTS OF EDUCATION.

771. **Cabot,** *Mrs.* **Ella Lyman.** Two experiments in social education. American teacher, 2:50–54, April 1913.
"Read before the Conference on social education in high schools, of the Religious education association, Cleveland, O., March 10, 1913."

772. **Cole, Nelda H.** The social service work of the Briggsville school. Atlantic educational journal, 8:260–62, March 1913.
"The Briggsville school is a rural training school in connection with the State normal school at North Adams, Mass."

773. **Monroe, Paul.** Influence of the growing perception of human interrelationship on education. American journal of sociology, 18:622–40, April 1913.
Says that one of the important applications of the new conception of education is its adoption "as the means of raising backward nations to full membership in the family of nations."

774. **Ward, Edward J.,** *ed.* The social center. New York and London, D. Appleton and company, 1913. x, 359 p. 12°.
Bibliography: p. 344–51.

775. **White, Eva W.** The home and social efficiency. Journal of home economics, 5:122–30, April 1913.
"Presented at the annual meeting of the American home economics association, Boston 1912."

CHILD WELFARE.

776. **McCracken, Elizabeth.** The American child. Boston and New York, Houghton Mifflin company, 1913. xxvi, 191 p. illus. 12°.
CONTENTS: 1. The child at home. 2. The child at play. 3. The country child. 4. The child in school. 5. The child in the library. 6. The child in church. Conclusion.

777. **Pepler, Douglas.** The care committee, the child and the parent; a small volume containing the history of the provision of meals to the children of poor parents; and an account of children's care committees, their work and organization, with particular reference to the place of the voluntary worker and the duties of an official. London, Constable & company, ltd., 1912. 101 p. 12°.

778. **Werner, Carl.** Bringing up the boy. A message to fathers and mothers from a boy of yesterday concerning the men of to-morrow. New York, Dodd, Mead and company, 1913. xiii, 114 p. illus. 12°.

MORAL AND RELIGIOUS EDUCATION.

779. **Coleman, Norman F.** The Bible as literature in the high school. School review, 21:246–49, April 1913.
Shows the results obtained in Spokane in the year 1904.

780. **Huntley, Emily.** Graded school problems; questions from the field discussed and answered. London, The Sunday school union [1912]. 215 p. 12°.
Relates to the graded Sunday school.

781. **Roger, Maurice.** Le deuxième Congrès international d'éducation morale. Revue pédagogique, n. s. 62:201–224, March 1913.
First article, to be continued.

782. **Smith, Charles Forster.** Religious work in a state university. Religious education, 8:66–76, April 1913.
An account of religious work and conditions at the University of Wisconsin. Reprinted from the Methodist review, October 1912.

783. **Stainsby, W. C.** The religious education of children. Parents' review, 24:161–75, March 1913.

784. **Sutton, W. S.** A general discussion of the different plans for moral instruction. Texas school magazine, 15:7–9, April 1913.
"A paper read before the Religious education association, Cleveland, Ohio."

785. Tale-bearing and character. Outlook, 103:708–15, March 29, 1913.
A dissertation on school ethics, illustrated by letters from teachers. Results of early intellectual training.

MANUAL AND VOCATIONAL TRAINING.

786. **Anthony, Willis B.** Teaching real life in school. World's work, 25:695–98, April 1913.
Describes work at the Practical arts school, Fitchburg, Mass.

787. **Buchanan, Charles M.** The cultural value of vocational training. Southern workman, 42:203–208, April 1913.

788. **Cadbury, Edward.** Experiments in industrial organization. With a preface by W. J. Ashley, professor of commerce in the University of Birmingham. London, New York [etc.] Longmans, Green, and co., 1912. xxi, 296 p. 12°.
Education of employees, p. 11–67.

789. **Challman, S. A.** How to begin industrial work in small schools. School education, 32:7–8, March 1913.

790. **Deutscher ausschuss für technisches schulwesen.** Abhandlungen und berichte über technisches schulwesen. Band I–IV. Leipzig und Berlin, B. G. Teubner, 1910–1912. 4 v. 8°.

Band I–II, Arbeiten auf dem gebiete des technischen mittelschulwesens. Band III, Arbeiten auf dem gebiete des technischen niederen schulwesens. Band IV Berichte aus dem gebiete des technischen hochschulwesens.

This important series has now reached its fourth volume.

791. **Dewey, John.** Industrial education and democracy. Survey, 29:870–71, 893, March 22, 1913.

A reply to an article on the Wisconsin experiment in industrial education, by H. E. Miles, Survey, February 15, 1913. Prof. Dewey condemns the scheme of industrial education which has been proposed for adoption by the next legislature of Illinois. This scheme proposes "a separate State commission of vocational education, wherever the community may wish to develop any form of industrial education." The writer says that it will result in "industrial classes," and possibly an exploitation of labor.

792. **Hicks, Warren E.** The function of continuation schools. Wisconsin journal of education, 45:70–72, March 1913.

Discusses elementary-industrial schools, part-time schools, evening classes, etc.

793. ——— Vocational education in Wisconsin. American schoolmaster, 6:145–54, April 1913.

Discusses continuation schools.

794. **Jevons, H. Winefrid.** The industrial training and placing of juveniles in England. Journal of political economy, 21:243–54, March 1913.

Says that opinion in England is growing, "that to lessen the extent of juvenile employment in unsuitable occupations, legislative action is necessary."

795. **Leighton, E. V.** Some public schools that are not failures. II. The Beverly independent industrial school. Popular educator, 30:425–29, April 1913.

796. **Mearns, William.** Six million workers. The public school and the self-supporting woman. Saturday evening post, 185:16–17, 48–49, March 22, 1913.

Tells of the work of various trade schools for girls, such as the Manhattan trade school for girls, New York, Union school of salesmanship, Boston, etc.

797. **Nearing, Scott.** Public schools that are making good: 1. Elementary schools that are linked to real life. Ladies' home journal, 30 : 19–20, 72, April 1913.

Among other things describes the work of the Fitchburg (Mass.) Practical arts school. Advocates vacation schools in summer, etc.

798. **Russell, James Earl** *and* **Bonser, Frederick Gordon.** Industrial education. New York city, Teachers college, Columbia university, 1912. 50 p. 8°.

799. **Thomson, Mary Horner.** Environment and efficiency; a study in the records of industrial schools and orphanages. London, New York [etc.] Longmans, Green and co., 1912. 100 p. 8°. (Birmingham studies in social economics and adjacent fields . . . I)

VOCATIONAL GUIDANCE.

800. **Barrows, Alice P.** Report of the Vocational guidance survey. New York, Public education association of the city of New York [1912] 15 p. 8°.

Reprinted from the fourteenth annual report of the City superintendent of schools, New York city, 1912.

The Vocational guidance survey has now become the Vocational education survey, a department of the Public education association. A final report is in preparation.

801. **Hermann, Anna.** Die berufswahl unserer töchter. Lehrerin, 20 : 401–4, March 15, 1913.

An address before parents in a girls' secondary school. The speaker begins her discussion with two statements she has frequently heard from fathers: "Woman's place is the home"; and "While I am living my daughter will not have to earn her living".

AGRICULTURAL EDUCATION.

802. **Johns, W. A.** School gardens. Ohio educational monthly, 62 : 151–56, April 1913.
Garden work by grades, from the first to the eighth grade.

803. **Knirk, Carl F.** Agriculture in the high school. School science and mathematics, 13 : 306–10, April 1913.
Agriculture in a city high school.

804. **Meier, William Herman Dietrich.** School and home gardens. Boston, New York [etc.] Ginn and company [1913] v, 319 p. front. (col.) illus. 8°.

805. **Riordan, Raymond.** A new idea in state schools that will build up character and body as well as brain. Craftsman, 24 : 52–60, April 1913.
Advocates the establishment of a farm school in every community. Properly managed such a school would support the public school of the district. Author says: "A cooperative market could become a part of the project."

COMMERCIAL EDUCATION.

806. **Downey, James E.** "Education for business." The Boston high school of commerce. Journal of political economy, 21 : 221–42, March 1913.
Describes activities and curriculum.

807. **Hotchkiss, Willard E.** The Northwestern university school of commerce. Journal of political economy, 21 : 196–208, March 1913.
Purpose of institution was to give in evening courses "an opportunity for capable and ambitious employees to pursue business subjects from the point of view of foundation principles."

808. **Jones, Edward D.** Some propositions concerning university instruction in business administration. Journal of political economy, 21 : 185–95, March 1913.
Advocates the raising of industrial activity to the plane of an intellectual pursuit, governed by a high code of ethics.

809. **Sheppard, James J.** The place of the high school in commercial education. Journal of political economy, 21 : 209–20, March 1913.
Says that the commercial school ought not to limit its activity to day instruction.

MEDICAL EDUCATION.

810. **Bevan, Arthur Dean.** Medical education and the hospital. Journal of the American medical association, 60 : 974–79, March 29, 1913.
Sketches the history and development of medical science. Advocates the cooperation of the municipal hospital and the general hospital, supported by private endowment, with the medical department of the university.

811. **Colwell, N. P.** The present status of medical education. Journal of the American medical association, 60 : 1096–99, April 5, 1913.
Report given at the ninth annual conference of the Council on medical education, Chicago, February 24, 1913. Illustrated with graphic statistics.

812. **Lyon, E. P.** The problem of teaching general medicine. Journal of the American medical association, 60 : 1049–54, April 5, 1913.
Writer thinks that the weakest part of medical teaching is general medicine. "It should be the strongest. It should be a university department, like the other divisions of biologic science."
Read as the report of the committee on pedagogy before the Association of American medical colleges, February 26, 1913.

813. A premedical college year. Journal of the American medical association, 60 : 1016–17, March 29, 1913.
Gives a schedule of the subjects "offered in academic and secondary schools, credits in which are acceptable for entrance to the preliminary college year leading to the medical courses."

EDUCATION OF WOMEN.

814. **Conference of university women, Oxford, Eng.** The Christian education of women in the East. Being addresses delivered at a conference of university women at Oxford. September 4th to 10th, 1912. London, Student Christian movement [1912] 160 p. 8°.

815. **Cowan, Minna G.** The education of the women of India. New York, Chicago [etc.] F. H. Revell company [1912] 256 p. illus. 8°.

816. **Gulick, L. H.** Amerikas weibliche jugend am lagefeuer. Körperliche erziehung, 46:35–39, February 1913.

Describes the Campfire girls of America. Typical of the prevailing German interest in American physical education movements.

817. **Hendrick, Burton J.** A school for womanhood. McClure's magazine, 41:46–57, May 1913.

Describes the activities of the Washington Irving high school, New York city, which, according to the writer, "represents a vigorous revolt against the rigidity of the American public schools."

EDUCATION OF SPECIAL CLASSES.

818. **Berkey, J. M.** Special schools for exceptional children. Pennsylvania school journal, 61:420–23, March 1913.

Address delivered before the graded school department of the Pennsylvania state educational association, December 27, 1912.

819. **Favrot, Leo M.** Training teachers for rural schools for negroes. Arkansas school journal, 18:13–15, March 1913.

Claims that in addition to the general requirements in scholarship, professional training and personal attributes, a teacher of a rural school should possess a love of nature, an understanding of rural activities, and a knowledge of the art of rural industries.

820. **Fuller, Sarah.** Home training in the development of speech. Volta review, 14:701–9, March 1913.

To be continued. Contains illustrations showing the positions of the vocal organs in speech.

821. **Herndon, Carrie P.** The exceptional child and what we are doing for him. Normal instructor, 22:26, April 1913.

Discusses the physically and morally exceptional child. The next article by the same author will deal with the mentally exceptional child.

822. **O'Donnell, Francis H. E.** Ethics in the education of the deaf. Volta review, 14:720–27, March 1913.

LIBRARIES AND READING.

823. **Fargo, Lucile F.** The place of the library in high school education. Education, 33:473–77, April 1913.

Discusses the question of making the library an *integral* part of our system of secondary education.

824. **Freeman, Marilla Waite.** The joint work of the high school and the public library in relating education to life. Library journal, 38:179–83, April 1913.

"Read at the meeting of the Department of libraries, Southern educational association, Louisville, Ky., November 29, 1912."

825. **Greenman, Edward D.** The development of secondary school libraries. Library journal, 38:183–89, April 1913.

Bibliography: p. 188–89.

Describes briefly four representative types of high school libraries, and gives statistics showing the growth of secondary school libraries since 1895.

826. **Herbert, Clara W.** An exhibit of library resources helpful to schools and teachers. Public libraries, 18:150–52, April 1913.
Describes an exhibit at the Public library of Washington, D. C.

827. **Olcott, Frances Jenkins.** The children's free library and city education. American city, 8:257–64, March 1913.

828. **Wood, Harriet A.** Sets for children. Public libraries, 18:138–41, April 1913.
Gives the replies of circular letters sent to a number of children's librarians to discover their attitude toward four sets of children's books.

PERIODICALS INDEXED IN THIS NUMBER.

American city, 93 Nassau street, New York, N. Y.
American education, 50 State street, Albany, N. Y.
American journal of sociology, University of Chicago press, Chicago, Ill.
American school board journal, 129 Michigan street, Milwaukee, Wis.
American schoolmaster, State normal school, Ypsilanti, Mich.
American teacher, 225 Fifth avenue, New York, N. Y.
Arkansas school journal, Peoples building, Little Rock, Ark.
Atlantic educational journal, 19 West Saratoga street, Baltimore, Md.
Catholic educational review, Washington, D. C.
Colorado school journal, 230 Railway Exchange building, Denver, Colo.
Columbia university quarterly, Columbia university press, New York, N. Y.
Contemporary review, 249 West Thirteenth street, New York, N. Y.
Craftsman, 41 West Thirty-fourth street, New York, N. Y.
Éducateur moderne, Paris, France.
Education, 120 Boylston street, Boston, Mass.
Educational foundations, 31–33 East Twenty-seventh street, New York, N. Y.
Educational review, Columbia university, New York, N. Y.
Elementary school teacher, University of Chicago press, Chicago, Ill.
English journal, University of Chicago press, Chicago, Ill.
Fortnightly review, 249 West Thirteenth street, New York, N. Y.
Frauenbildung, Leipzig, Germany.
Geographical teacher, London, England.
Good housekeeping magazine, 381 Fourth avenue, New York, N. Y.
Harper's magazine, Franklin square, New York, N. Y.
High school quarterly, University of Georgia, Athens, Ga. (Prof. J. S. Stewart, editor.)
Independent, 130 Fulton Street, New York, N. Y.
Irish educational review, Dublin, Ireland.
Journal of education, 6 Beacon street, Boston, Mass.
Journal of educational psychology, Warwick & York, inc., Baltimore, Md.
Journal of home economics, Roland Park Branch, Baltimore, Md.
Journal of political economy, University of Chicago press, Chicago, Ill.
Journal of the American medical association, 535 Dearborn avenue, Chicago, Ill.
Körperliche erziehung, Vienna, Austria.
Ladies' home journal, Curtis publishing company, Philadelphia, Pa.
Lehrerin, Leipzig, Germany.
Library journal, 298 Broadway, New York, N. Y.
McClure's magazine, Fourth avenue and Twentieth street, New York, N. Y.
Minerva, Ostende, Belgium.
Monatshefte für den naturwissenschaftlichen unterricht, Leipzig, Germany.
Monatshefte für deutsche sprache und pädagogik, 558–568 Broadway, Milwaukee, Wis.
Nebraska teacher, 1126–1128 Q street, Lincoln, Nebr.
Normal instructor, Dansville, N. Y.
Ohio educational monthly, 55 East Main street, Columbus, Ohio.

Ohio teacher, 81–87 North Third street, Columbus, Ohio.
Oklahoma school herald, Oklahoma City, Okla.
Oregon teachers monthly, Salem, Oreg.
Outlook, 287 Fourth avenue, New York, N. Y.
Pädagogische warte, Leipzig, Germany.
Parents' review, London, England.
Pedagogical seminary, Worcester, Mass.
Pennsylvania school journal, Lancaster, Pa.
Popular educator, Popular educator company, Boston, Mass.
Popular science monthly, Substation 84, New York, N. Y.
Progressive teacher, Nashville, Tenn.
Psychological clinic, Woodland avenue and Thirty-sixth street, Philadelphia, Pa.
Public libraries, 37 South Wabash avenue, Chicago, Ill.
Religious education, 332 South Michigan avenue, Chicago, Ill.
Revue internationale de l'enseignement, Paris, France.
Revue pédagogique, Paris, France.
Revue universitaire, Paris, France.
Rivista pedagogica, Rome, Italy.
Saturday evening post, Curtis publishing company, Philadelphia, Pa.
School and home education, Bloomington, Ill.
School education, 717 Hennepin avenue, Minneapolis, Minn.
School journal, 31–33 East Twenty-seventh street, New York, N. Y.
School music, Keokuk, Iowa.
School news and practical educator, Taylorville and Chicago, Ill.
School review, University of Chicago press, Chicago, Ill.
School science and mathematics, Mount Morris, Ill.
School world, London, England.
Schweizerische lehrerzeitung, Zürich, Switzerland.
Science, Substation 84, New York, N. Y.
Sewanee review, Sewanee, Tennessee.
Sierra educational news, 50 Main street, San Francisco, Cal.
South Dakota educator, Mitchell, S. D.
Southern workman, Hampton, Va.
Survey, 105 East Twenty-second street, New York, N. Y.
Texas school magazine, 1304 Commerce street, Dallas, Tex.
Virginia journal of education, Richmond, Va.
Volta review, Volta Bureau, Washington, D. C.
West Virginia school journal, 346 Front street, Morgantown, W. Va.
Wisconsin journal of education, Parker educational co., Madison, Wis.
World's work, Doubleday, Page & Co., Garden City, N. Y.
Wyoming school journal, Laramie, Wyo.
Yale review, 135 Elm street, New Haven, Conn.
Zeitschrift für kinderforschung, Langensalza, Germany.

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ANNOTATED BIBLIOGRAPHY

OF

MEDICAL INSPECTION AND HEALTH SUPERVISION OF SCHOOL CHILDREN IN THE UNITED STATES FOR THE YEARS 1909–1912

WASHINGTON
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1913

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, January 1, 1913.

SIR: In the older Greek education one-half of the school day was regularly spent by the Greek boys in exercises and games designed to make them strong and also to teach them the mental significance of sound health. During the middle ages this high ideal of soundness and sanity was lost, and even looked upon as spiritually dangerous.

There is emerging to-day a new health consciousness. We now know that diseases are not providentially sent, but are the results of natural forces which man may overcome. We know, too, even better than the Greeks, that physical soundness and mental sanity are vitally related. Hence, we realize that mental progress demands physical progress.

Medical inspection of school children has for its chief purpose the early discovery of physical defects or disease, so that such defects may be corrected in early life, or that contagion may be reduced to a minimum. No educational movement in modern times has had more vital relations to the children, to the homes they represent, and to the Nation, than medical inspection of school children and the general hygienic movement it typifies.

The work began in this country less than 20 years ago, but we are now in the midst of the most rapid development of this part of the public educational service. Information is eagerly sought from all parts of the country.

The manuscript hereby transmitted, entitled "Annotated Bibliography of Medical Inspection and Health Supervision of School Children in the United States for the Years 1909–1912," was compiled in the Division of School Hygiene and Sanitation of this bureau. It is a digest of the chief literature on this subject published in America during the past four years, and will be very helpful, especially to school and health officers. I therefore recommend its publication as a bulletin of the Bureau of Education.

Very respectfully,

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

ANNOTATED BIBLIOGRAPHY OF MEDICAL INSPECTION AND HEALTH SUPERVISION OF SCHOOL CHILDREN.

GENERAL REFERENCES.

ALLEN, Arch Turner. The school and physical welfare of the child. *In* North Carolina association of city public-school superintendents and principals. Proceedings, 1911. Raleigh, Edwards & Broughton printing co., 1911. p. 19–27.

"It is the business of the school to see that the physical surroundings of the child comply in every detail with the laws of healthful living. The room should be large; the air space ample; the ventilation continuous; the light free from shadows and properly directed; the sittings accommodated to the child's size and not to the grade; the water pure and of the right temperature, and sanitary arrangements for using it; the toilets clean; the playgrounds large and dry; and plenty of time to use them . . . .

"The school is under urgent obligations legally as well as morally to see that it does not become a distributing center for contagious diseases. . . .

"When we consider what medical inspection will do for the schools, its cost becomes a legitimate school expenditure. It is just as much so as the salary of the teacher. . . .

"The three essential things in this inspection are the following:

"1. To know the health records of the community.

"2. To know as far as possible the physical condition of the children who attend school.

"3. To follow up this knowledge by having as many of them treated as we can find a means for, and to use these health records in every helpful way possible."

American medical association. Report of committee on administrative methods of physical examination of school children. *Its* Journal, 57: 1750–51, November 25, 1911.

Signed: Ernest B. Hoag, M. D. *and* Everett C. Beach, M. D.

Recommends: That city and county boards of education should secure the services of trained medical inspectors sufficient in number to instruct all elementary school teachers in making preliminary physical examinations or health surveys; that city boards of education maintain departments of medical inspection, the heads of such departments to be medically trained men; that the cities be divided into districts with a medical inspector in charge of each district.

That each child be given a physical examination each year, preferably at the beginning.

That this examination be sufficiently thorough to detect defects that interfere, or are liable to interfere, with the health, growth, and development of the child, such examinations to include the examination of the eye, ear, mouth, nose, throat, teeth, heart, lungs, thorax, shoulders, spine, hips, inguinal region, feet, nutrition, mentality, and nervous system.

That the preliminary examination in the elementary schools be made by the teacher or nurse and in the high schools by the director of physical education or one of his assistants.

That the supplementary physical examination be made in the elementary schools by the trained medical inspector, and in the high schools by the director of physical education if he be medically trained; otherwise by the medical inspector; that a careful record be kept of the results of the preliminary and supplementary examinations to include only such data as would be of future use to the teacher or director.

That these records be kept by the teacher and passed on with the promotion slip, a duplicate being retained in the office of the health inspector.

That whenever feasible the physical examination be conducted preferably by examiners, employed by and under the direction of the board of education. When this is not feasible the appointee of the board of health should be approved by the board of education.

That a greater effort be made to establish hearty cooperation between the school physician, the teacher, the family physician, the home, and the free dispensaries in following up and in securing the correction of physical defects.

American medical association. Report of committee on medical inspection of schools. *Its* Journal, 57: 1751–57, November 25, 1911.

Chairman, George L. Leslie.

"Two divisions of this field of work are advisable:

"A. *Under the control and direction of boards of education*—that part of the work essential for the intelligent handling of pupils and students throughout their period of educational training; and for the maintenance of hygienic environment and hygienic activity—the field of *educational hygiene.*

"B. *Under the control and direction of boards of health*—that part of the field of work concerned with the care and control of contagious and infectious diseases as a part of the field of *public health.*

"EDUCATIONAL HYGIENE—UNDER THE CONTROL AND DIRECTION OF BOARDS OF EDUCATION.

"PURPOSES OF THE WORK.

"1. The establishment of biennial, annual, and, when necessary, more frequent skilled physical and developmental examinations of pupils and students by a staff of experts. The establishment of initial examination of pupils by the teaching force of the schools, as far as the teaching force is qualified, prior to the skilled examinations by experts.

"2. By effective action, based on the data of these examinations, to secure (*a*) the correction of physical anomalies and thus remove the growth-barriers of children and youths, and (*b*) whenever possible and practicable, to adjust educational activities to meet the requirements of physical and mental health, growth and development, and thus establish a special field of education for the maintenance of continuous health and development supervision of pupils and students.

"3. To maintain a scientific and systematic study of mental retardation and mental deviation of pupils and students by skilled examination, and whenever possible and practicable, by skilled training in special schools.

"4. To establish skilled physical and health examinations of candidates for teachers' positions prior to their election to determine vital fitness for their work, and thereafter to maintain continuous supervision of health and efficiency to teachers as related to the work of the schools.

"5. (*a*) To organize and supervise courses of technical instruction in hygiene for pupils, students and teachers, in the means of conservation of physical and mental health, growth and development; in the means of correction and prevention of defects, disease and degeneracy; (*b*) whenever necessary for efficiency, to give practical and technical instruction to the teaching force of the schools, while engaged in teaching, in the initial physical and developmental examination of pupils; and in the skilled physical and developmental and psychoclinical examination of exceptional pupils, abnormal and supernormal.

"6. To establish and maintain well-equipped medical anthropometric and psychoclinical laboratories in the public schools which shall afford opportunity and equipment—

"(*a*) for sufficiently skilful medical, anthropometric and psychoclinical examination of exceptional pupils and of all pupils requiring special examination.

"(*b*) for such technical training of teachers in the laboratory and experimental phases of educational work, connected with the physical and mental examination of pupils, in clinical psychology and in experimental pedagogy as is essential for the intelligent handling of pupils.

"(*c*) for essential work in hygiene and sanitation.

"7. To exercise expert sanitary supervision in the planning and maintenance of school buildings and grounds.

"8. To bring about the establishment of dental and medical clinics for pupils whose parents are financially unable to provide essential medical and dental aid.

"9. Whenever possible and practicable, to cooperate with State, county, and city health officers in the detection of and reporting of contagious diseases.

"10. Each department of educational hygiene to constitute a bureau of practical investigation and research in educational hygiene, and as such to cooperate with State bureaus of educational hygiene whose functions will or ought to be the organization and supervision of State-wide work and investigation in this special field of education—looking forward to the establishment also of a national bureau of educational hygiene.

"*An approximate grouping of pupils.*—Based on the data of physical and developmental examinations which ought to follow the examination of pupils and students. 1. Those for whom medical and dental aid is essential. 2. Those whose respiratory or circulatory systems are defective or are poorly developed, for whom a larger amount of out of door life and physical activity is essential, or other modification of school activities necessary. 3. Those whose nervous systems are defective or poorly developed and who require an unusual amount of out of door life, physical activity, special care and skilled training. 4. The segregation of pupils requiring an unusual amount of physical activity for possible mental growth—both sexes. 5. Segregation of pupils of truancy and criminal tendencies or otherwise showing more or less degeneracy, and assignment to special schools with special training. 6. Segregation of mentally defective pupils and assignment to special schools. 7. The segregation of supernormal pupils and assignment to special schools. 8. As far as practicable, the grouping of pupils in accordance with development age.

"In this program, school nurses are assistants to the staff. Their field work is essentially as follows:

"To assist members of the staff in the skilled examination of pupils and otherwise as assistance is needed; to assist teachers in making preliminary surveys of their pupils and in giving initial examina-

tions, notifying parents of essential needs of pupils, etc.; visiting parents and in all justifiable ways establishing effective cooperation between home and school. Further, the function of the school nurse is that of the social educator in the field of hygiene. As such, the work of the school nurse is one of high order.

"The staff of experts, the teaching force of the schools and school nurses, *working from the standpoint of education*, form an educational corps to secure the effective cooperation of home, school and school authorities in meeting the requirements of the physical and mental health and growth of pupils. When educational means fail, the law must remedy instances of neglect of health and growth of children.

"Each department of educational hygiene should act, as far as practicable and consistent with the required established work, as a bureau of investigation and research.

"The functions of departments of educational hygiene are twofold: 1. Carrying out certain established work of the schools. 2. Investigation and research of problems of health and development, of clinical psychology and of experimental pedagogy.

"Two classes of experts stand out as preeminently qualified for work in this special field of education: 1. The psychologist-educator. An expert in child hygiene, in educational and clinical psychology and in practical experimental pedagogy; skilled in physical and mental diagnosis, of normal and abnormal growth and development and having a knowledge of elementary medicine; a thoroughly trained, broad-gauged expert in education. 2. The skilled physician who has had sufficient training and acquaintance with educational work.

"Your committee, therefore, joins in a recommendation already made by Dr. Terman of the department of education of Leland Stanford university, essentially as follows: That steps be taken to bring about a conference of representatives from the United States department [bureau] of education, the National education association, the American medical association, the American institute of homeopathy and other national medical associations and the Russell Sage foundation for child welfare, which committee, after joint consideration of the problems involved, shall formulate and recommend alternative systems of educational hygiene which in time would be accepted as standard requirements in this special field of education."

American school hygiene association. Report of Committee on status of medical inspection of school children throughout the United States. *In its* Proceedings, 1910. Springfield [Mass.] American physical education review, 1910. p. 176–83.

Chairman, John J. Cronin, M. D.

A questionnaire [*see* Appendix, p. 129] was prepared by the committee and sent to 50 places. Of these, 14 submitted forms properly made out. All declared that some form of organized medical inspection of school children was adopted. All places have a system of following up and controlling the cases found with contagious disease and physical abnormality. Particularly in towns, the percentage of children brought under treatment is very high—75 to 100 per cent. In one place only are the parochial schools under municipal supervision. General inspection for contagious conditions is made regularly once a year, and thereafter as the emergency arises. The physical examination is made on selected cases. The number of children under the care of one inspector varies from 900 to 10,000. Not one place provides baths for the use of school children in the school building, and only two places report facilities for bathing in municipal baths. Of the 14 places reported, 13 are supervised under the direction of departments of education. Seven places report some form of instruction in the care of children's teeth.

American school hygiene association. [Report of Committee on] Status of medical inspection in the United States. *In its* Proceedings, 1911. Springfield, Mass., American physical education review, 1911. p. 144–48. tables.

Chairman, John J. Cronin, M. D.

About 1,400 questionnaires were sent out.

Returns were received as follows: 308 from North Atlantic States; 45 from South Atlantic States; 67 from South Central States; 286 from North Central States; and 52 from Western States. The chairman says: "In concluding this statistical report, I am constrained to inquire why is it that only 337 places of 758 reporting have made any attempt to protect the health of their school children."

AYRES, Leonard Porter, *comp.* Medical inspection legislation. New York City, Russell Sage foundation, Dept. of child hygiene [1911] 53 p. map. 8°. ([Russell Sage foundation. Dept. of child hygiene. Pamphlet] Health, education, recreation. no. 99)

Principal features of State laws and regulations providing for medical inspection, 1911: p. 6.

Abstracts of laws and regulations: p. 7–11.

AYRES, Leonard Porter. Physical defects and school progress. American physical education review, 14 : 197–206, April 1909. tables.

Also in Hygiene and physical education, 1 : 599–606, September 1909; *and with some additional tables and paragraphs in his* Laggards in our schools. New York, Charities publication committee, 1909. p. 117–31.

Reprinted. Russell Sage foundation. Department of child hygiene. No. 41.

The interrelation of physical defects as discovered by medical inspection, and retardation of school children as found in statistical studies of Camden, N. J., New York City, and Philadelphia.

"In the two Philadelphia examinations the percentage of defectiveness among 'exempt' and 'non-exempt' children is very similar. The Camden investigation showed very little difference as regards vision and hearing between retarded children and those of normal age. The New York examinations showed that the retarded children have on the whole fewer defects than those of normal age, but it goes farther than this. It establishes the important principle that, except in the cases of vision, older children have fewer defects, and . . . that when children who are badly retarded are compared with normal children and very bright children in the same age groups so that the diminishing of defects through advancing age does not enter as a factor, the children rated as 'dull' are found to have somewhat higher percentages of each sort of defect than the normal and bright children. Here again defective vision must be excepted . . . .

"Physical defectiveness does have a bearing on the progress of children, but . . . physical defects constitue *a* cause, not *the* cause of retardation."

CLAPP, Raymond G. How can our physical examinations be made more effective? Hygiene and physical education, 1 : 76–78, 370–72, April, June 1909.

"I have come to the conclusion that a medical examination should be required annually of every college student; that medical consultation and advice should be free to all students; that the health of the general student body should be protected by the early determination and proper control of all cases of venereal disease, tuberculosis, and other infectious diseases; that each student should be carefully watched to see that he does not impair his health by overwork; that there should be practically no medical or surgical treatment given which will arouse outside antagonism; and that all this supervision should be made by the department of physical education."

Conference on "Diseases among school children, and the remedy." Boston medical and surgical journal, 166 : 621–27, April 25, 1912.

Diseases of the mouth, throat, and chest, by Richard C. Cabot; Malnutrition, by George S. C. Badger; Diseases of the skin, by C. Morton Smith; Orthopedic defects and rickets, by Joel E. Goldthwait; Nervous and mental disorders in the schools, by Arthur Willard Fairbanks.

Conditions in Boston: Approximately 4,000 school children suffering from malnutrition. From September 13 to December 31, complete physical examinations were made in the schools, and 11,691 children with skin diseases were found.

Papers read under the auspices of the Boston association for the relief and control of tuberculosis, January 31, 1912.

COPLAN, M. Medical inspection of our public schools. Pediatrics, 23: 465–74, August 1911.

References: p. 473–74. *Also in* Ohio medical journal, 7: 443–47, September 1911.

Emphasizes the need for the proper teaching of sex hygiene in the public schools. "The medical inspector should be one of the instructors, or have the supervising of the instruction of the hygiene of the sex in the public school. The medical inspector should instruct the boys and the nurse the girls."

CORNELL, Walter Stewart. Health and medical inspection of school children . . . Philadelphia, F. A. Davis co., publishers, 1912. illus. figs. tables. 8°.

CONTENTS. I. Medical inspection. II. Hygiene. III. Defects and diseases (the eye; the nose and throat; the ear; the teeth; the nervous system; mental deficiency; the skeleton; nutrition; the skin; speech; infectious diseases; prevalence of defects and diseases).

"The aim is to present a practical exposition of the work of medical inspection, born of the examination of some 35,000 children, and to give to physicians and teachers a survey of medical practice as it relates to children of school age. A review of the work of medical inspection in different localities is not attempted." (Preface)

DAVISON, Alvin. Medical inspection of schools. Pennsylvania school journal, 57: 471–75, May 1909.

Reprinted in Pennsylvania State educational association. Department of city and borough superintendents. Proceedings, 1909. p. 13–16.

Statistical résumé of work and defectives found.

"The benefits, then, to be derived from the medical inspection of school children are a saving of many thousands of dollars spent in instructing backward pupils, the prevention of much sickness and suffering, the warding off of a considerable amount of early death, and the remedying of numerous defects in childhood which are certain to limit the usefulness of the future citizen, and in a considerable number of instances make him an object of charity, and sometimes even a criminal.

"If medical inspection is to prevail it should be made as efficient as possible. With the results of the experience of others, the opinion must be upheld that both kinds of inspection should be undertaken,

the one for the detection of contagious diseases, the other for physical defects. The work relative to contagious diseases should either be related to or under the direction of the board of health, while the physical examination should be directed by the school authorities."

DIXON, Samuel C. The object to be obtained by the medical inspection of school children. Harrisburg, Pa. [1910] 9 p. 8°. (Pennsylvania health bulletin, no. 8, February 1910)

Résumé of medical inspection in various cities:

"The first day that medical inspection went into effect in New York, 140 children were found to be ill with dangerous contagious diseases, contagious skin diseases, or parasites.

"In Boston during the first four months, 5,825 pupils were found to be sick, of whom 1,035 needed to be sent immediately home. Of these, 286 were capable of spreading the disease from which they were suffering . . . . The New York report for the year 1905 presents the following: Number of [examinations of] children, [1] 6,285,435; children excluded, [1] 18,844."

"In the annual report for 1905 of the board of health of Philadelphia the number of pupils referred to inspectors by principals for examination, 74,524; the number of individual examinations was 141,303; the number excluded from school was 7,598; the number of pupils found to be requiring medical care, but not needing to be excluded from school, was 27,481.

"In the city of Chicago, during a period of four months, 233 schools were visited with the result that 1,417 cases of diphtheria and 306 cases of scarlet fever were discovered in actual attendance on school.

"In the city of New York trachoma was known to prevail. The report showed that 17 per cent of all the school children were suffering from this affection and it was found necessary to open a special hospital for the treatment of this disease alone in the year 1903."

The number of cases treated by operation was 4,337; treated without operation, 11,599.

"In 1900, the deaths from [diphtheria] in the United States were 16,475, the great majority of whom were school children. In Chicago, medical inspection was instituted in 1900. During the year preceding 3,931 cases of that disease had occurred, of which 843 were fatal. During 1900 the number of cases fell to 3,303, a decrease of 628, and the number of deaths was reduced to 797.

"One most important result of inspection is the discovery of unreported cases of contagious disease at the homes. In Chicago 744 cases of diphtheria discovered in schools brought to light 2,619 cases at home, while 231 cases of scarlet fever discovered by the school inspectors disclosed 745 cases at home.

"In Terre Haute, Ind., out of 491 children examined 125 were found defective in hearing, and yet only 3 had been so recognized by their teachers.

"In the year 1906, out of 9,258 deaths from pulmonary tuberculosis in this State [Pennsylvania], 1,456 were of persons under 20. Of children over five and under nine, 39 died of that disease, of those between nine and fourteen, 166, and of those between fourteen and nineteen, 784.

"The investigations of our county medical inspectors and health officers [in Pennsylvania] soon developed the fact that throughout our rural districts the excellent laws which the legislators had provided for the construction and management of schools in the interest of the protection of the health of our school children" were not observed, and in 1908 the department inaugurated a system of sanitary inspection of school buildings through its health officers.

"On careful deliberation it has been decided therefore to place the supervision of the whole system of school inspection in the hands of the county medical inspectors, including both sanitary inspection of buildings and grounds, and medical examination of the children . . . and only physicians are to be entrusted with it.

"The reports of inspection are made on score cards. One of these is marked 'Sanitary inspection,' the other 'Physical record.' On the first is recorded the sanitary condition of the schoolrooms, grounds and outbuildings including provisions for light, heat, ventilation, water supply, and sanitary conveniences. On the second the age and sex of the pupil, the condition of sight, hearing respiration, skin, teeth, cervical glands, contagious diseases, pulmonary tuberculosis, and deformities."

DOWLING, Oscar. Value of medical inspection for schools and school children. *In* Southern commercial congress. Proceedings, Third annual convention, 1911. p. 334–50.

A general résumé of statistical information from various medical inspection reports of leading American cities.

DRESSLAR, Fletcher Bascom. The duty of the State in the medical inspection of schools; results which the public may rightfully expect. *In* National education association. Journal of proceedings and addresses, 1912. Published by the association, 1912; *and in* U. S. Bureau of education. Current educational topics no. 3. p. 5–13. (Bulletin no. 24, 1912)

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[1] *See* New York City. City superintendent of schools. Seventh annual report . . . year ending July 31, 1905. p. 502. (Report of Dr. Thomas Darlington, commissioner of health)

Recent books on medical inspection of school children: p. 13.

Medical inspection must include the following points:

"1. It ought to serve as an efficient means of preventing the spread of contagious diseases. This will necessitate a careful examination of all children, especially at the beginning of the school terms, in order both to exclude children who are suffering from contagious or parasitic diseases and those 'carriers' who are a menace to others, even though they themselves show no decided effects of the diseases they are capable of disseminating.

"2. Medical inspection ought to emphasize in a decided way the especial significance of hygienic conditions in schools; it is far more important to furnish conditions which promote the health and development of well children than it is to make special efforts to care for those who are sick or defective, especially where these defects have been largely induced through neglect.

"3. Health officers must know more about education, more about the hygiene of teaching, more about the normal demands of child life; they must possess more ability to work with teachers and the people for the general welfare of the community. A large majority of physicians, those who would not hesitate to undertake the work of supervising the health interests centered in our public schools, are wholly unfit for the place because they know next to nothing of the ideals and methods of modern education, and they are ignorant of their own ignorance. The best results can not obtain under such conditions.

"4. We need doctors of health, who will be more delighted in exhibiting a large list of healthy, well-developed children than a long list of those who are physically defective and diseased; they must be able to see defects and diagnose correctly, but their chief emphasis should be in preventive measures."

FERRELL, John A. The medical inspection of schools and school children. North Carolina. State board of health. Bulletin, 27: 91–110, June 1912. illus. tables. map.

Reprinted as Public school health bulletin no. 4. Raleigh, Issued from office of superintendent of public instruction of North Carolina, 1912.

In the following résumé of medical inspection and its needs, Dr. Ferrell dwells chiefly upon the need for sanitation and the wide prevalence of hookworm disease in North Carolina. "We know," he writes, "that the disease prevails in 99 of the 100 counties of the State. In determining its frequency by counties we microscopically examine not less than 200 rural school children—ages 6 and 18, inclusive—taken at random in each county. The surveys are complete in 29 counties and partially complete in other counties to a degree sufficient to justify the map.

"Can we neglect to have the simple examination made and the treatment administered; knowing that by it more than one-fourth of all our girls and boys are being stunted in their bodies, dulled in their minds, robbed of their vitality, rendered backward in their work, and started on a road which will lead them to death, invalidism, or perhaps to prisons?"

GIVENS, Amos J. The prevention of nervous and mental diseases through medical inspection of schools. North American journal of homoeopathy, 26: 291–301, May 1911.

Reprinted. Stamford, Conn., 1911.

The need is for immediate action, in order that medical supervision shall go "as far beyond the detection of physical defects as that detection is an advance beyond the mere search for contagious and infectious diseases. An extension which shall secure for children from all classes of society the beneficent determination of temperamental and constitutional conditions, of mental capacity, of the soundness or unsoundness of the nervous system—an estimation and valuation by the medical inspector not only as a pathologist, but also as a psychologist."

GULICK, Luther Halsey. The importance of medical inspection of schools. School progress (Trenton) 1: 20–23, December 1909.

Each school district should have an inspector. The cleanliness, ventilation, water supply, closet, the accumulation of dust, the examination of children's eyes, throats, noses, ears, and skin, their general physical make-up, should be gone into. The inspector should have authority to exclude from school, and to take such steps as he judges necessary to prevent spread of communicable diseases.

"Growth is more necessary than education. There is not a school board in America that systematically weighs and measures its children to ascertain whether or not they are growing normally, and if not to readjust the mental task to meet these physiological conditions; the courses of study are constructed without the guidance of any data based on any careful investigation of these vital matters. We must develop within our boards of education power to see that the fundamental principle of human life—health—is properly guarded. Until these things are done it will be impossible to contribute anything of permanent value to physical development."

GULICK, Luther Halsey *and* **AYRES, Leonard Porter.** Medical inspection of schools. [4th ed., rev.] New York, Survey associates, inc., 1913. 224 p. illus. 8°. (Russell Sage foundation)

Bibliography: p. 203–206.

Text of earlier book has been entirely rewritten, and material and forms brought down to date.

GULICK, Luther Halsey *and* **AYRES, Leonard Porter.** Medical inspection of schools. [4th ed., rev. and reprinted, January 1913] New York, Survey associates etc., 1913. 224 p. illus. tables. charts. map. 8°.

Bibliography: p. 203–206.

Per capita costs and salaries, p. 101–13 (places by name). Legal provisions, p. 165–80.

Inspection by physicians for contagious diseases costs about 10 cents per child per year; for contagious diseases and examinations for detection of physical defects average about 25 cents per child per year; where school nurses are employed, the average cost is about 30 cents per child per year. In cities having relatively efficient systems, the number of defective pupils receiving remedial treatment as a result of the examinations is from about 10 to 50 per cent.

At the beginning of year 1911, there were 415 school nurses employed in 102 municipalities. In 1912, Minnesota, Massachusetts, Pennsylvania, Rhode Island, New Jersey, West Virginia, Louisiana, Colorado, Utah, and the District of Columbia had mandatory medical inspection laws; California, Washington, North Dakota, Indiana, Ohio, Virginia, New York, Connecticut, Vermont, and Maine had permissive laws, and the remaining States had no laws. Dental inspection is carried on in nearly 200 cities.

HARTMAN, Lawton M. The problem of the public school from the medical point of view: The studies and their effects on the nervous system. Pennsylvania medical journal, 13: 581–88, May 1910. tables.

The author gives a general résumé of various writers' work and findings, substantially as follows:

1. That the subject of nervous diseases among the school children has, up to this time, not received sufficient attention by the inspectors of any prevailing systems of medical inspection of the public schools; that this subject is being recognized as of the utmost importance from the standpoint of the physical and mental development of the country's youth.

2. That there is now no definite knowledge of the part played by any particular study or group of studies or any school occupation in the development of nervous affections among the school children.

3. That there is a large and varied group of nervous manifestations, shown as definite and distinct alterations from the normal mental and physical state, occurring among school children.

4. That before the age of puberty overwork at school is of much less importance as a factor in the causation of nervous disorders.

5. That after the age of puberty, especially among girls, overwork at school plays a much more definite part in producing affections of the nervous system.

6. That the importance of medical inspection of the schools is becoming universally recognized.

7. That proper and broader legislation should be urged for the legal support of more general, more accurate and more powerful medical inspection of schools.

8. That more general establishment of child-study departments should be strongly encouraged and urged.

9. That there should be greater cooperation between educators and physicians for maintaining a better standard of health among the school children.

10. That the individual management of those pupils who may be affected with some nervous disorders is the only rational way of providing for the proper and continued education and supervision of the health of the school youth.

HERBST, H. Herbert. Medical oversight of public schools. Pennsylvania medical journal, 13: 592–602, May 1910.

Bibliography: p. 602.

General résumé of reports made.

HILL, David Spence. First measures needed for child welfare upon the part of municipal and educational authorities in the South. Southern medical journal, n. s., 3: 99–104, January 1911.

1. The compulsory medical inspection of all school children and schoolhouses.

2. Bureaus of research.

"These two fundamental measures would not produce an immediate cure-all for the sins against the children. But adopted, they might mean the application of the scientific method to the root of some of our troubles; the health, efficiency, and happiness of millions of children in the South."

HINES, Linnaeus Neal. A study in retardation. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 53–56.

Also in Journal of education, 75: 460–61, April 25, 1912.

An investigation of retardation in the Crawfordsville, Ind., schools, conducted with 1,229 grade pupils as the subjects; of these 605 boys and 624 girls, 114 boys and 93 girls came under the retarded classification.

Retardation causes.

	Boys.	Girls.
Physical causes, general bad health, anæmia, etc	21	21
Lacking mental ability to do the minimum amount of work required	57	42
Home and outside environment	34	32

Of the 1,229 children, "887 belonged to the good health class and 342 to the poor health class. In the same body of pupils, only 207 are retarded, and of the retarded pupils, only 63 belong to the poor health class. The poor health pupils constitute 27.8 per cent of the entire number, 1,229 or 27.2 per cent of the nonretarded pupils come in the poor health class and . . . only 30.4 per cent of the retarded pupils are in the poor health classification. Of the nonretarded pupils, 279 are in poor health or need medical attention. The term 'poor health' [includes] poor eyesight, defective hearing, or other similar troubles.

"It may be safely stated that from 70 to 80 per cent of school children have some defect.

"What, then, can be done about the matter. Employ school doctors and school nurses, improve the home conditions where possible, better the conditions in the schoolroom and on the playground. . . . If every pupil did his work in the open air all the time, if the school gave him a bath whenever he needed it, if the school kept him properly fed, if the school through the doctor and the nurse sought to remedy his defects, conditions would be changed for the better. . . . The demand is insistent that the school shall take up this burden for society. The school will answer the call by assuming a responsibility for the physical welfare of the child as well as for his mental and moral welfare."

HOAG, Ernest Bryant. The teacher's relation to health supervision in schools. American academy of medicine. Bulletin, 13: 127–34, June 1912.

Reprinted in American academy of medicine. Conservation of school children.

"(1) Every teacher before certification should be obliged to give evidence of practical elementary knowledge of the functions of the body.

"(2) Every such teacher should be obliged to give evidence of practical knowledge of those ordinary physical defects of children in the schools, which interfere with school progress.

"(3) Every normal school and teachers' college should provide adequate instruction in the lines indicated above. Very few of them now do so, although when questioned most of them answer in the affirmative, regarding certain traditional courses in biology and physiology as covering the requirement, a supposition which the facts prove almost entirely unwarranted.

"(4) Teachers who are without experience in child hygiene but who are already certificated, should be instructed by properly qualified specialists in this subject.

"(5) Physical educators must receive this special training in addition to that which they ordinarily acquire in their courses and with it their efforts will prove particularly valuable in this new sort of health supervision."

The writer gives an outline for the health grading of the school child, to be made by the teacher at the beginning of the term. It embodies the following general heads: (*a*) General appearance; (*b*) mental conditions; (*c*) nervous conditions; (*d*) teeth; (*e*) nose and throat; (*f*) ears; (*g*) eyes; (*h*) communicable diseases of the skin; (*i*) eruptive diseases.

"When the outline is properly filled out," says Mr. Hoag, "the teachers will be surprised with the information it develops on points often unsuspected. As a preliminary test before the arrival of the school medical officer or nurse, it will furnish invaluable aid."

HOFFMAN, Frederick L. Medical and physical examination of school children. American statistical association. Quarterly publications, 12 : 558–65, June 1911. tables.

"It would *pay* the community to reduce absence and retardation to a minimum by intelligent medical and physical inspection of school children and to employ methods of sanitary control. . . . We require to know the amount of floor space per pupil as well as the amount of cubic space. . . . We require more accurate and conclusive statistics on the question as to whether there is a direct relationship between school attendance and epidemic outbreaks of acute infectious diseases. . . . We require to know more definitely the actual temperature and air conditions in schoolrooms during the winter months. . . . We need better mortality statistics of children at school, thoroughly analyzed according to causes and circumstances to determine the extent to which deaths from diphtheria, scarlet fever, and whooping cough are directly traceable to school infection."

Iowa State teachers' association. Educational council. Report of the committee on medical inspection of schools. *In its* Proceedings, 1909. Des Moines, Iowa, Emory H. English, State printer, 1910. p. 59–76. tables.

Chairman, H. E. Blackmar.

Salaries of medical inspectors, etc.: p. 68–69. Bibliography: p. 74–75. Reprinted.

A résumé of medical inspection. In vogue in some form in France since 1833. In 1874 at Brussels in Belgium, medical inspection in its full modern sense of the term was successfully inaugurated. In Germany a beginning was made at Dresden in 1867, but not until 1889 was a system of true medical inspection established. In 1887 Hungary enacted a law providing for school physicians. Moscow has had school physicians since 1888. Japan has had medical inspection since 1898. The English law became effective January 1, 1908.

In the United States 9 States have passed laws relative to medical inspection. In 1899 Connecticut passed a law for the testing of the eyesight in all public schools. The New Jersey statute became a law in 1903. Vermont followed in 1904. The Massachusetts law was enacted in 1906. The New Jersey law was revised and became mandatory in 1909. Since September, 1908, medical inspection laws have been passed in Colorado, Washington, California, Maine, and Michigan, and are pending in Ohio and Indiana. Controlling authority in cities outside of Massachusetts (1908), p. 60–62. Established since November 1908, in additional cities, p. 65. Salaries of inspectors, p. 68; "cost varies with the extent and kind of work done."

Forms: p. 71–73. References: p. 74–75.

"Until statutory provision is made for medical inspection we urge upon the superintendents and school boards the wisdom of taking initiatory steps. . . . (1) By issuing each semester or oftener reports on the health and habits of the children. (2) By printing on this report card, or distributing in some other manner, simple rules of health for school children. (3) By printing and distributing leaflets relative to the care of the teeth."

MAXWELL, William Henry. The necessity for Departments of health within Boards of education. *In* American school hygiene association, meeting with the Department of school superintendents, National education association of the United States, 1909. Proceedings of the First, second and third congresses. Published November, 1910, by the American school hygiene association. Springfield [Mass.] American physical education review, 1910. p. 207–12.

Also in National education association of the United States. Department of superintendence. Proceedings, 1909. Published by the association, 1909. p. 98–103; *in* National education association of the United States. Journal of proceedings and addresses, 1909. p. 252–257; *and in* American physical education review, 14:301–307, May 1909.

"So far . . . as medical inspection deals with physical defects and with building up the constitution of children through their school work, it will be most efficiently conducted under the supervision of the school authorities. . . .

"Some of the problems, which the physician equipped with the resources of modern science may help us to solve, are the following: (*a*) *Problems of posture;* (*b*) *problems of vision;* (*c*) *problems of nose and throat;* (*d*) *problems of nutrition and growth.*

"The problem of instructing parents in the feeding of children . . . can be accomplished only through a well-organized corps of medical experts and nurses.

"A department of hygiene is necessary because teachers stand in constant need of the skilled physician's advice in the treatment and training of children. . . . The crowning reason for placing this work under the supervision of the board of education is that the work of mind-training is so interwoven with the work of physical training that the work of the teacher and the work of the physician cannot be disassociated without loss to both."

See also opinion of the New York City superintendent of schools. A department of school hygiene. *In his* Annual report, year ending July 31, 1907. p. 133–43.

"Dual responsibility in the school—that of the board of education and that of the department of health—always has resulted and always will result in confusion and inefficiency in the work affected. It is owing to this dual responsibility that the large annual appropriation made by the city for the physical examination of school children is to a great degree wasted. Efficient service will be obtained only when the board of education is made solely responsible for all the work that goes on in the schools. . . . The school nurses would do much more and better work if they were made responsible to the educational authorities."

New England association of school superintendents. A report on the Physical welfare of the public school child. . . May 1909. Hartford, Connecticut, Printed by R. S. Peck & co. 43 p. tables.

A résumé, with tables, of various medical inspection reports, showing association of physical defects with retardation; i. e., South Manchester, Conn.; Medford, Mass.; Camden, N. J.; New York, N. Y.;

New Haven, Conn.; and other cities; with special showings, also, of eye, nose, ear, throat, and teeth conditions in reports.

"The means taken to protect the health of the school children in the New Haven schools are:

"1. Children having contagious diseases, others in the same family, and those living in the same house must remain out of school until given permission by the health officer to return.

"2. All books and school material used by a child after the beginning of a contagious disease are promptly burned.

"3. Schoolrooms in which there have been cases of contagious diseases are closed and thoroughly fumigated. . . .

"4. School physicians, local practicing physicians, are at their offices ready to respond to school calls every morning, if summoned by the school principal, to decide such cases as the principal does not feel competent to pass judgment upon. If the physician finds it necessary, he immediately dismisses the child temporarily from school. Bi-weekly visits are also made by the school physicians to every school building for purposes of general inspection and consultation.

"5. A school nurse spends all her time in school assisting the physician, treating simple cases, and visiting the home to give parents necessary information about treatment to be continued there.

"6. The newer school buildings and many old ones are provided with the best systems of practical ventilation. . . .

"7. Drinking fountains are being installed in increasing numbers in our schools and drinking cups are being abandoned.

"8. Paper towels are replacing the cloth towel."

NEWTON, Richard Cole. Medical and sanitary inspection of schools. Medical record, 75: 480–82, March 20, 1909.

Résumé of the history of medical inspection, and of some inspections made in Brookline, Mass., and in Chicopee, Mass., where one child out of 500 examined had perfect teeth—but had also spinal disease. Not one child out of the 500 was without defects.

"Perhaps the greatest need in the educational world at present is for medical men, sanitarians, and architects on the boards of education. . . . The plan now in vogue in Boston of hiring the best available architect, engineer, etc., in the city to supervise and construct all the school buildings, should be adopted in every city and should be extended to the employment of at least one thoroughly competent chief medical and sanitary inspector. This man should be responsible to the board of education . . . and should have complete control of the sanitation and hygiene of the school buildings and of all the scholars. In the matter of ventilation, heating, drainage, playground space, control of athletic sports, hiring and discharge of physical and gymnasium directors and teachers, he should be subordinate only to the superintendent of schools and the board of education. . . .

"Every town having 2,000 or more school children should employ medical officer of instruction, at a yearly salary of not less than $3,500, who should give his entire time to the schools during the school year, and should supervise the playgrounds, and the out-of-door physical instruction during the summer. He should be allowed to employ as many nurses as might be needed at a compensation of $75 a month, and as many physical instructors, both male and female, as might be required. He should have charge of all the records and statistics bearing upon the physical condition of the children and of the sanitation of the buildings."

Part of a report presented to the New Jersey State sanitary association, December 5, 1908.

QUIX, F. H. Die prophylaxe der taubheit bei schulkindern. *In* III[e] Congrès international d'hygiene scolaire, 1910. Rapports. Paris, A. Maloine, éditeur, 1910. v. 1. p. 679–83.

Literaturverzeichnis: p. 683.

Also in Internationales archiv für schulhygiene, 6: 422–28, July 1910.

Literaturverzeichnis: p. 427–28.

In no country have statistics been established by school physicians, showing the percentage of deafness among school children, presentable by judicious prophylaxis.

Ear specialist should test the school child's hearing at beginning of his school life, and to its close make annual examinations, to take place on school premises. Teachers should not be allowed to make these examinations.

In the study of the prophylaxis of deafness, the diseases to be examined are: (*a*) Adenoids; (*b*) infectious diseases, measles, diphtheria, influenza, scarlet fever, meningitis, typhoid fever, mumps; (*c*) catarrh and tuberculosis of the superior air passages; (*d*) ear conditions.

RAPEER, Louis W. Medical supervision of schools. American education, 15: 352–57, April 1912.

Contains a tentative standard classification of school ailments, with the following divisions: (1) Physical defects; (2) noncontagious ailments; (3) parasitic ailments (transmissible); (4) infectious diseases. *Also* Symptoms of children's ailments, as follows: For teacher, nurse, and parent—(1) Teeth defects; (2) nose, throat, and ear disorders; (3) eye ailments and defects; (4) nervous ailments; (5) digestive system disorders; (6) deformities and bad posture; (7) infectious and parasitic ailments.

RAPEER, Louis W. Tentative standard plan for medical supervision of schools. Some summary suggestions. School and home education, 31: 367–72, May 1912.

Also with verbal difference in Journal of education, 75: 583–84, May 23, 1912.

"1. Medical supervision and all other provisions for public health through the public schools should be administered by the boards of education.

"2. All school health provisions should be correlated in a department of hygiene with the following divisions: Medical supervision, school sanitation, physical education, health teaching, and the hygiene of instruction.

"3. The supervisor of hygiene should be a physical educator with special medical knowledge of school children. . . . His whole time should be devoted to the work of the schools and his salary should be about $3,000 a year, for 12 months. . . .

"4. Most of the work of inspection, examination and follow-up of school children should be done by specially trained and selected school nurses working 12 months in the year and not by part-time physicians working a few hours or minutes each week.

"5. Where a supervisor for full time can not be employed a supervising nurse or part-time physician should direct and train the nurses for the school work, with the help of the superintendent of schools.

"6. In cities under 15,000 population medical supervision should begin with the employment of nurses and a physician for consultation or examination only. . . .

"7. The salary of $2,500 or $3,000 for the hygiene supervisor will mean in many cities very little extra outlay of money; the elementary supervisor of physical training may in certain cases be dispensed with; few or no physicians need be employed except on the nurse's basis; and the work of the school nurses can be made very much more efficient. The need is for men and women specially trained for school health work. . . .

"11. The schools may well start with a nurse for each 1,500 elementary school pupils. . . . They should be employed 12 months in the year with a few weeks vacation, and receive a beginning salary somewhere between $70 and $100 a month. . . .

"12. The year's work should begin with a preliminary *room*-inspection of all pupils from the lowest grades up; the nurse standing with her back toward a good light and having the pupils file slowly past her while she calls out by the code numbers ailments and defects observed—the teacher at her desk writing down the nurse's findings on each pupil's historical health-record card, and properly checking those to be referred to parents, excluded, given corrective exercises, and the like. . . . Forty or fifty children can be room inspected in an hour in average rooms.

"13. The nurse should call at each of her schools each morning for the individual inspection of suspicious cases referred to her by the teachers . . . and at the last school she should spend the remainder of her morning in making physical examinations, or helping the physician examiner, if any.

"14. About 10 children can be examined in an hour. . . .

"15. In the two lower drawers of the filing case the health record cards for the school may be arranged by sexes, left and right, and by rooms, alphabetically for each room, and the lowest grades in front. . . .

"16. A simple standard set of blank forms should be used. Most blanks now used . . . are woefully inefficient. . . . The New York bureau of municipal research and the Sage foundation are exceedingly helpful. . . .

"17. A simple school[1] classification and nomenclature of children's disorders should be adopted. Both the popular and the scientific names should be used. . . .

"19. The school nurse with practice can inspect for contagious diseases. . . .

"20. The final test of medical supervision and educational hygiene is prevention and cure. . . .

"21. Daily reports throughout the year should be made by the nurse and physician while employed. These reports of cases found, referred, excluded, cured or improved should be summarized weekly and printed in the newspapers."

RAYCROFT, Joseph E. Function and administration of medical supervision in the school. Hygiene and physical education, 1: 38–42, 257–59, April, May 1909.

"The plan for medical supervision should provide for: (1) Careful consideration of all phases of the school environment. . . . (2) Regular *physical examinations*. . . . (3) *Physical training*. . . . (4) *Medical inspection* which should be regular and systematic."

RUSSELL SAGE foundation. Department of child hygiene. What American cities are doing for the health of school children; Report covering conditions in 1,038 cities. New York City, Russell Sage foundation, Dept. of child hygiene [1911] 43 p. tables. diagr. 8°. (Health, education, recreation, no. 101)

Pt. I. Medical inspection. Pt. II. Hygiene of the schoolroom.

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[1] *See his* Medical supervision of schools. American education, 15: 352–57, April 1912 (preceding reference).

Summary of provisions for health of children in public schools, 1911.

States.	Number of cities reporting.	Having medical inspection.	Inspection for contagious diseases.	Vision and hearing tests by teachers.	Vision and hearing tests by doctors.	Physical examination by doctors.	System under board of health.	System under board of education.	Number of school doctors.	Number of school nurses.	Inspection by dentists
United States	1,038	443	405	552	258	214	106	337	1,415	415	69
North Atlantic Division	411	236	224	261	125	135	58	178	852	261	24
South Atlantic Division	74	23	23	29	12	10	7	16	48	11	8
South Central Division	101	35	34	43	23	12	12	23	41	5	3
North Central Division	382	109	93	182	73	38	21	88	417	114	30
Western Division	70	40	31	37	25	19	8	32	57	24	4
North Atlantic Division:											
Maine	19	8	6	18	4	4	.....	8	13	.....	2
New Hampshire	12	3	2	7	3	2	1	2	11	1	1
Vermont	7	.....	1	7	.....	.....	.....	.....	.....	.....	.....
Massachusetts	108	107	103	104	2	57	23	84	348	49	9
Rhode Island	16	8	7	5	6	22	3	5	20	1	1
Connecticut	25	15	15	21	7	5	11	4	26	7	1
New York	77	20	22	51	17	13	12	8	197	160	4
New Jersey	47	47	47	12	45	40	.....	47	117	30	2
Pennsylvania	100	28	21	36	21	12	8	20	120	13	4
South Atlantic Division:											
Delaware	1	1	1	1	1	.....	1	.....	18	.....	1
Maryland	5	1	1	.....	1	1	1	.....	5	5	.....
Virginia	13	4	4	8	2	2	1	3	12	1	1
West Virginia	10	2	3	2	.....	1	.....	2	1	1	.....
North Carolina	15	5	4	12	1	1	.....	5	3	.....	4
South Carolina	11	4	4	1	3	4	1	3	5	.....	1
Georgia	13	5	5	2	3	1	2	3	4	4	.....
Florida	6	1	1	3	1	.....	1	.....	.....	.....	1
South Central Division:											
Kentucky	19	7	6	7	5	1	2	5	9	2	2
Tennessee	6	4	3	4	3	2	2	2	2	.....	1
Alabama	9	3	3	3	3	3	.....	3	3	2	.....
Mississippi	6	.....	.....	2	.....	.....	.....	.....	.....	.....	.....
Louisiana	8	3	3	4	2	1	1	2	6	.....	.....
Texas	31	10	11	14	5	2	3	7	8	.....	.....
Arkansas	9	3	3	3	1	.....	2	1	4	1	.....
Oklahoma	13	5	5	6	4	3	2	3	9	.....	.....
North Central Division:											
Ohio	68	12	9	28	9	5	1	11	67	24	8
Indiana	51	12	10	31	7	4	4	8	41	.....	4
Illinois	53	14	12	22	9	5	4	10	113	45	3
Michigan	42	19	16	24	12	5	3	16	78	14	5
Wisconsin	41	14	10	27	9	6	3	11	37	6	3
Minnesota	24	9	8	10	8	5	2	7	23	13	1
Iowa	29	6	8	15	4	1	.....	6	3	6	.....
Missouri	24	10	8	7	7	4	1	9	50	5	3
North Dakota	6	1	1	3	1	.....	.....	1	.....	.....	.....
South Dakota	6	2	2	3	1	.....	1	1	.....	.....	2
Nebraska	12	4	4	4	4	2	.....	4	3	1	.....
Kansas	26	6	5	8	2	1	2	4	2	.....	1
Western Division:											
Montana	6	.....	.....	2	.....	.....	.....	.....	.....	.....	1
Wyoming	3	1	.....	1	1	.....	1	.....	.....	.....	.....
Colorado	12	9	4	11	3	3	.....	9	1	1	.....
New Mexico	3	2	2	1	1	.....	1	1	3	.....	.....
Arizona	4	2	2	3	.....	.....	1	1	1	.....	.....
Utah	4	3	3	3	2	2	.....	3	3	.....	.....
Nevada	1	1	1	1	1	.....	.....	1	1	.....	.....
Idaho	3	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Washington	10	7	6	3	5	3	1	6	22	8	1
Oregon	5	2	2	2	1	1	2	.....	5	1	1
California	19	13	11	7	11	10	2	11	21	14	1

SHAFER, George H. Health inspection of schools in the United States. Pedagogical seminary, 16: 273–314, September 1911. tables.

Bibliography: p. 301–302.

Appendix. School medical inspection in New York City, p. 303–14.

"In general it may be said, that in the older and larger cities of the East and Middle West the board of health controls, whereas in the smaller cities of the East and the newer cities of the South and West the board of education controls. . . .

"It seems to be the general opinion that all matters pertaining to infectious and contagious diseases should remain under the control of the board of health, but with respect to the more complete health

supervision of school children there is a difference of opinion. . . . The present tendency seems to be in the direction of a division of the work, leaving to boards of health the control of all matters pertaining to infectious and contagious diseases, and assigning the boards of education those health problems which more vitally concern the educator."

Representative results: Percentages of number examined.

	Year.	Defective teeth.	Defective vision.	Hypertrophied tonsils.	Adenoids	Defective hearing.
Pasadena, Cal	1909	30.0	17	6.0	5.0	3.0
Lowell, Mass	1909	.....	10	7.0	3.0	3.0
Newark, N. J	1909	8.5	13	4.0	5.0	1.4
Harrisburg, Pa	1909	8.0	30	36.0	19.0	7.0
New York City	1909	54.0	17	22.0	19.0	.....
Cleveland, Ohio	1910	27.0	27	15.4	8.0	2.5
School of observation, University of Pennsylvania	1909	38.5	28	5.1	13.5	5.1

SOBEL, Jacob. The home as a factor in the medical inspection of school children. New York medical journal, 91: 1157–65, June 4, 1910. illus. tables.

Describes the conditions among the poor of New York City.

"The medical inspection *at* the school is but a mere beginning; . . . the solution of accomplishment lies in the home. . . . There is hardly a single defect . . . found by us in school work, which is not materially influenced by home conditions of the tenement. . . . During the year of 1909, 231,081 children were examined physically, and of these 173,311 were tested for vision, the remainder being in lower grades where vision tests were unreliable and impracticable. Of these 173,311, 17.6 per cent were found defective, 30,408. From my personal observation and examination of several thousand cases I should place the percentage of defective vision as about 30."

Adenoids, malnutrition teeth, etc. Dr. Sobel, in his statements regarding housing conditions and children's growth and welfare, presents Glasgow, Scotland, tables. *For which subject, if further reading is desired, see:*

Crowley, Ralph H. The physical conditions of school children. School government chronicle, 77: 78–81, January 12, 1907. supplement. tables.

London county council. Report of the Medical inspector, year ended March 31, 1905. School government chronicle, 75: 171–72, February 17, 1906.

Mackenzie, W. Leslie *and* Foster, A. Report . . . on a collection of statistics as to the physical condition of children attending the public schools of the school board for Glasgow, with relative tables and diagrams. School government chronicle, 78: 145–46, August 17, 1907.

Returns were made for 36,883 boys and 35,974 girls. The mentally defective have been omitted.

"The grouping followed is confirmed by the distribution of one, two, and three-roomed houses. . . .

"These figures show that the one-roomed child, whether boy or girl, is always on the average distinctly smaller nd lighter than the two-roomed; and the two-roomed than the three-roomed; and the three-roomed than the four-roomed The numbers examined are so large and the results are so uniform. . . It cannot be an accident that boys from two-roomed houses should be 11.7 lb. lighter on an average than boys from four-roomed houses and 4.7 inches smaller. Neither is it an accident that girls from one-roomed houses are, on the average, 14 lb. lighter and 5.3 inches shorter than the girls from four-roomed houses.

"This is the most extensive investigation ever undertaken in Britain as to the heights and weights of school children in primary and higher grade schools. The tables and diagrams . . may legitimately be held to be a provisional standard for future investigations."

STEWART, James. Medical inspection of school children. *In* National conference of charities and correction. Proceedings, 1910. Fort Wayne, Ind., Press of the Archer printing co. p. 194–200.

"I. As it affects the educational progress of the child. II. As it affects the home and the family. III. As it affects society in general. IV. As it affects the family physician in his practice. V. As to conduct of medical inspection—whether by boards of education or by boards of health."

STILES, Charles Wardell. [Hookworm disease among Southern factory and school children] *In his* Hookworm disease among cotton-mill operatives. Washington, Government printing office, 1912. p. 12; 16–20; 33; 36–37 (the "Typical cotton-mill child") 37–38. tables. statistics. (U. S. [Department of Commerce and Labor] Report on condition of woman and child wage-earners in the United States. vol. XVII)

The various mills and factories, schools, and other institutions inspected, in these States, numbered 177.

"It appears that about 1 in every 4 children under 16, about 1 in every 5 hands from 16 to 20 . . . came within the suspect class. During the year 1911 microscopic examination of 37,267 children of school age (6 to 18 years) has been made in 87 counties in all by the State boards of health of Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. The percentage of infection by counties ranges from 2.5" to 90.2" (footnote, p. 18).

STILES, Charles Wardell. Some recent investigations into the prevalence of hookworm disease among children. *In* Child conference for research and welfare, 1910. Proceedings. New York City, G. E. Stechert & co. [c1910] 2: 211–15.

Observations made in 5 different States, on 2,271 white children.

First series. Of 70 boys and 91 girls, the microscopical examination revealed hookworm infection in 133; before the examinations were made, according to the judgment of local physicians, the apparent age of these children, 29 boys and 28 girls were estimated as underdeveloped from one to eight years each, as indicated by physical development. After the examinations were made, it was found that 49 of these 57 children were infected. Of these 49 infected, underdeveloped children (29 boys and 20 girls) the figures were as follows:

Under-development.	Boys.	Girls.
One year	9	6
Two years	10	13
Three years	6	1
Four years	3	.....
Eight years	1	.....

All these children live on farms. Of the total, 161 farm children, 94 are living on farms which have no toilet of any kind; the remaining 67, on farms having the ordinary disease-spreading surface toilet, open at the back. For about 200 different localities, in 6 States, the same conditions are found—records of about 4,645 farm houses show 55.2 per cent having no toilet of any kind.

Second series. Observations made in 4 States, covering 2,110 children in 15 schools and orphanages located in 12 cities, towns, and villages. Of these children, 822 were classed as suspects.

Supplementing the medical inspection come the open-air schools, the better preparation of food, and the playgrounds. "In addition to all the other points thus far mentioned at this conference, the question of the sanitary arrangements in the backyards to the homes in which our children live is a factor second to none that has been discussed, and in those sanitary arrangements we often find the explanation of much of the sickness and death among our rural, village, and suburban children, the explanation of the underdevelopment of many a child, and the backwardness of many a pupil in our schools."

STOREY, Thomas A. Medical inspection in schools from the standpoint of the educator. Medical review of reviews, 18: 466–72, July 1912.

Reprinted.

Also in American academy of medicine. Bulletin, 13: 432–41, December 1912; *and in* American academy of medicine. Conservation of school children.

The value of medical inspection when under control of educational authority. "If it is to take a place in the school curriculum it should be under the same responsible control that covers the other members of that curriculum. . . . If medical inspection must follow up cases . . . the 'follow up' must be made through the regular school channels and in the regular way. If medical inspection must have an educational influence upon the hygienic habits of the school child, then its plan of instruction should be pedagogical and under the supervision of the school authorities. . . . It should be a part of the very organization of the school itself.

"From the point of view of the educator, medical inspection carried out in school by a department of the school has a far greater probability of success and efficiency than a system applied in the schools by a department outside the school and without responsibility to a control from the school."

STRAW, Zatae L. Medical inspection of schools. *In* New Hampshire medical society. Transactions, 1911. Penacook, N. H., W. B. Ranney, printer, 1911. p. 154–66.

A general résumé.

Qualifications demanded in the work of medical inspectors: "1. Skill in diagnosis. . . . 2. In no other field of practice is so much general pathological knowledge required. . . . 3. The medical inspector must have a broad and practical knowledge of hygiene.

"He must have special and technical knowledge with regard to heating and lighting and ventilation—the proper construction of methods of drainage, of disinfectants, of the powers of endurance in the child, length of time of safe confinement for it in the schoolroom."

TOWNSEND, John F. Medical inspection of schools and school children. South Carolina medical association. Journal, 7: 334–39, September 1911.

Also in Pediatrics, 23: 410–18, July 1911. *Title:* Medical inspection of school children.

"Medical inspection, to be effective, must embrace in its scope the following:

"First. The relation of the school child to its fellow children as to the communicable diseases, ringworm, pediculosis and various forms of skin diseases.

"Second. The relation of the school child to the community in which it lives, as to the infectious diseases, measles, scarlet fever and diphtheria.

"Third. The relation of the *educating* of a child to its physical life as to the effect of the school life upon its health, illustrated by the physical wrecks from overstudy, cases of great mental development with physical deterioration, the effects of poor school hygiene on the child's physique.

"Fourth. The school child with reference to its ability to gain an education, or the influence of physical defects upon the educational side of the child's school life. . . . The discovery of these defects and their removal consequently is of supreme importance to the child.

"The results of medical inspection have been extremely satisfactory. First. In the promotion of efficiency in the schools. Second. In the protection of the community. Third. In the preservation of the lives of the children, and promotion of a healthy spirit among them."

United States. Bureau of labor. Retardation, repeating, and elimination. *In its* Conditions under which children leave school to go to work. Washington, Government printing office, 1910. p. 245–303. tables. (*Its* Report on condition of woman and child wage-earners in the United States. vol. VII)

Statistical study of six cities: Pawtucket and Woonsocket, R. I.; Columbus Ga.; Columbia, S. C.; Plymouth and Hazleton, Pa.

Number and per cent of boys and girls repeating for specified leading causes (in part, here given).

Cause.	Boys.		Girls.	
	Number.	Per cent.	Number.	Per cent.
Lack of ability, slowness, dulness, or immaturity	203	20.0	164	21.2
Poor health and physical defects	131	12.9	115	14.9

"Poor health and physical defects [account] for 13.7 per cent. This does not tell the whole story, for in many cases the irregular attendance was probably due to or accompanied by poor health, but it is a sufficiently impressive total as it is."

It is for such children a medical inspector is of vital value.

VAN DERSLICE, James Warren. Medical inspection of public schools. Detroit medical journal, 10: 136–44, April 15, 1910.

Conclusion:

"The medical inspection of public schools is of vast importance to the welfare of the race, and of great economic value if it be properly executed. The controlling body should be a body of physicians vested with the police powers of the State, and to be the final arbiters in all matters of hygiene and sanitation regarding the school child. The medical inspectors should be competent medical men having special training for this work. They should be medical inspection specialists. School nurses should . . . follow up the cases and aid in carrying out of the work. . . . All notices regarding the physical condition of the child should refer the child to the family physician."

Dr. Van Derslice considers the prominence given to free dispensaries in these notices, to be ill advised. But since the very poor can be reached in this way only, they should be first considered, and not the income of "family physicians."

VAN DERSLICE, James Warren. The status of the school child. Pediatrics, 21: 653–61, December 1909. tables.

Data gathered in 26 cities, from 904 schools.

A statistical study of the school child: Retardation, grades and overage, causes of deficiency, defects according to ages, defects by grades.

"It may be taken as an axiom that the nearer a child is to the normal age for grade, the greater the probability of the pupil's continuance. Thus . . . an overaged child in the fourth grade has 1 chance in 25 of continuing through the eighth grade, while a child of normal age has 1 chance in 3. . . . The number of pupils compelled to leave school because of general ill-health was but 1 in 200. While there

is a loss of 50 per cent between the eighth grade and the high school, the artificial separation of the two is largely accountable for the loss. . . .

"Physical examinations were made of these pupils . . . .

Cases examined	153,503
Poor nutrition	8,856
Enlarged glands	38,177
Nervous diseases	1,541
Cardiac diseases	1,846
Pulmonary diseases	1,235
Skin diseases	3,107
Orthopedic diseases	2,985
Defective vision	45,577
Defective hearing	3,320
Nasal breathing	11,991
Defective teeth	55,174
Defective palate	1,169
Hypertrophied tonsils	31,640
Adenoids	10,049
Defective mentality	2,051

"These examinations were made by the school medical inspectors and under the rules laid down by the various school boards . . The incidence of the commoner infections—scarlet fever, diphtheria, measles—was noted in 6,764 cases. In these it was found that in 78 per cent of the cases occurring as initial cases in the family it affected the school child."

WELCH, J. H. The importance of medical inspection of schools and its present status. Kentucky medical journal, 9 : 749–52, October 1, 1911.

General statistical résumé.

"Experience of medical examiners thus far has shown that 7 out of every 10 children are in need of physical examination; 3 out of 10 show defective vision; 2 out of 10 are defective in breathing; and 7 out of 10 have defective teeth.

"What is the penalty for physical defects? Retardation, discouragement, dropping out of school, and annual waste estimated at $12,000,000. If only 50 per cent of these evils could be eliminated by medical inspection, would it not pay? I believe that all school children, teachers, janitors, school buildings, grounds, in all school districts, public, parochial, private, rural and urban should be subjected to examination by experts at least once a year."

WHEELER, R. M. A plea for medical inspection of schools. Journal of the Minnesota State medical association and The Northwestern lancet, 29 : 505–509, December 1, 1909.

"It is appalling to note the incompetency of most teachers to assist in this campaign for the betterment of school hygiene. . . .

"The plan of a system of medical inspection should . . include the proper education of teachers along the lines of physiology and hygiene. A State commission of medical inspectors should . . . lay down certain simple rules of school hygiene, which should be mastered by every teacher and inculcated into the mind of every pupil. Such lessons might include instruction in bodily and mental cleanliness, personal habits, injurious exercises, proper time of eating and studying, effects of narcotics and alcohol, simple methods of preventing the spread of disease, etc."

Scheme of inspection as outlined to be made by physician, "appointed according to State laws," upon child's first enrollment at school and afterwards; upon the first opening days to be in attendance at school and make a report as to each child's condition, record to be kept at the school. The physician to make, or confirm, all vaccinations; to submit written report to the educational authorities "as to what he considered the existing evils of the schoolroom and building, and make suggestions as to how this part of school sanitation may be improved. Poor lighting, bad ventilation, defective plumbing, dangerous stairways, insufficient heating might all be considered matters which would come within his sphere of supervision."

WILE, Ira S. School lunches and medical inspection. Medical review of reviews, 18:593–98, September 1912. tables.

Also in Journal of home economics, 4:345–52, October 1912.

"Twenty-five per cent of our public school children fail to attend school 75 per cent of the time. . . . Preventable disease is a large factor in this . . . and malnutrition plays no small part in preparing soil for such preventable diseases. . . . The total absence of the term 'malnutrition' in many statistical tables shows that this phase of the problem is entirely omitted in a consideration of medical inspection. . .

"The relation between school lunches and medical inspection is patent. Medical inspection should be so thorough as to indicate not merely the names of various sypmtoms and conditions, but should suggest whether or not malnutrition could possibly be an underlying factor. Under such conditions school lunches could serve in a curative way to assist in the relief of the conditions reported by the medical inspect rs. Frequently medical inspectors would also suggest those children not possessing marked

defects, but who are very close to the health poverty line, and for them school lunches could be instituted as part of the preventive measures . . . increasing mental acuity and building up the physical health of our school children."

WILE, Ira S. School lunches. Their relative physical advantages in elementary and secondary schools. New York medical journal, 96:422–25, August 31, 1912.

Reprinted.

Résumé of reports: New York, St. Louis, etc., showing the relation between nourished children and undernourished growth, mentality, dentition, and school progress.

"Medical inspection as related to the public school system makes note of many symptoms which are apparent among the children, but all too frequently fails to get down to the factors responsible for them."

WOOD, Thomas Denison. Health examination. *In* National society for the study of education. Ninth yearbook. Chicago, The University of Chicago press, 1910. Part 1:13–42. tables.

Bibliography: Health examinations, p. 105

The cities in the United States having the best organized systems are: Boston, Chicago, Cleveland, Los Angeles, Milwaukee, New York, and Philadelphia.

"The State cannot afford on economic grounds even, to educate a child who is handicapped by removable obstacles or whose personality or character is being distorted in any preventable manner."

WOOD, Thomas Denison. Health problems in education. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical educational review, 1912. p. 125–30.

Also read before the National council of education, National education association of the United States, meeting, 1912; *and in* U. S. Bureau of education. Current educational topics no. III. p. 13–19 (Bulletin no. 24, 1912)

"There are in the schools of the United States to-day approximately 20,000,000 pupils. Careful study of statistics and estimation of all conditions lead to the following personal conclusions:

"From (1½–2 per cent) 300,000 to 400,000 of these have organic heart disease.

"Probably (5 per cent) 1,000,000 at least have now, or have had, tuberculous disease of the lungs.

"About (5 per cent) 1,000,000 have spinal curvature, flat foot or some other moderate deformity serious enough to interfere to some degree with health.

"Over (5 per cent) 1,000,000 have defective hearing.

"About (25 per cent) 5,000,000 have defective vision.

"About (25 per cent) 5,000,000 are suffering from malnutrition, in many cases due in part at least to one or more of the other defects enumerated.

"Over (30 per cent) 6,000,000 have enlarged tonsils, adenoids or enlarged cervical glands which need attention.

"Over (50 per cent) 10,000,000 (in some schools as high as 98 per cent) have defective teeth which are potentially if not actually detrimental to health.

"Several millions of the children possess each, two or more of the handicapping defects.

"About (75 per cent) 15,000,000 of the school children in this country need attention to-day for physical defects, which are partially or completely remediable.

"Of essential importance in the health field are the following: (*a*) Maintenance of sanitary, healthful school environment with clean schoolhouses, abundant light, good air, etc. (*b*) Hygienic instruction and school management, with particular attention to influence of teacher upon nervous health of pupils. (*c*) Effective teaching of health and hygiene to all pupils in the schools. (*d*) Rational supervision and direction of play, games, athletics and all healthful and satisfying forms of physical education.

"Special features . . . which have direct bearing on health include the following: (*a*) Homes of the pupils. (*b*) Playgrounds and gymnasiums. (*c*) Dental clinics and other medical clinics for children. (*d*) Classes for defectives and cripples. (*e*) Open-air schools.

"Improvement in school hygiene involves prominently these factors:

"1. Recognition of extraordinary value of work of school nurses, and employment of nurses in the schools.

"2. More comprehensive and thorough training in school hygiene in all normal schools and other institutions for professional education of teachers.

"3. Better technical training for school physicians, school nurses, teachers of hygiene and physical education, and other special officers in this field.

"4. Requirements of tests of knowledge and skill in various phases of school hygiene for teachers in general, and certification of health specialists of different types."

INSPECTION FOR COMMUNICABLE DISEASES.

GENERAL REFERENCES.

DIXON, Samuel G. The medical and sanitary inspections of schools and their relation to the tuberculosis problem. *In* American school hygiene association. Proceedings of the first, second and third congresses. Published November, 1910. Springfield [Mass.] American physical education review, 1910. p. 35–42.

Read at the second congress, 1908.

"The decrease in mortality from tuberculosis has apparently been greatest in those States where systematic popular education for its restriction has been most active and general. There is no other known cause capable of producing such a gradually decreasing effect as is shown to have occurred. . . .

"Is there not reason to suppose the systematic education of our school children in the essential facts . . . would be followed by a still more noteworthy reduction in the next generation? Should it not be a part of the regular curriculum of every school in the country?"

FELL, A. S. The prevention of the spread of contagious diseases, particularly among children. American journal of public hygiene, 20: 82–91, February 1910.

"There should be a thorough system of medical inspection of all the school children in the city, State, public, private and parochial."

International municipal congress and exposition. First. Contagion and school inspection. Discussion. *In* Municipal advance. Extracts from papers read. Chicago, September 18–30, 1911. p. 117–19.

The conference as a whole voted in the affirmative on the following questions:

1. Should carriers be excluded from school? 2. Should vaccination be required for school children in cities, in small towns, in the country? 3. Should schools have physical examinations? 4. Should schools have dental examinations?

United States. Department of commerce and labor. Bureau of the census. [Mortality from children's diseases in Registration area, 1910: Ages 5 to 14] *In its* Bulletin, 109: 118.

	Ages 5 to 9.	Ages 10 to 14.	
Diphtheria and croup	2,938	700	3,638
Measles	588	152	740
Scarlet fever	1,731	442	2,173
Whooping cough	228	17	245
Total	.....	.....	6,796

WILE, Ira S. The social plagues and the public schools. New York medical journal, 92: 501–504, September 10, 1910. tables.

Reprinted.

Also in American academy of medicine. Bulletin, 11: 496–505, October 1910.

"The school throws no mantle of protection, educationally or physically, about children, when they most require it.

"In 1900, there were 446,133 teachers in the United States, of whom 118,519 were males and 327,614 were females. If . . . it is a 'conservative estimate that in this country the morbidity from gonorrhoea would represent 60 per cent of the adult male population and that of syphilis from 10 to 15 per cent,' are these teachers a possible source of infection of public school children? Are the janitors, scrubwomen, school attendants a source of possible infection of the children? . . .

"Venereal diseases among the colored children are said to be unusually common according to Southern physicians, and there are 872,344 negro children between the ages of 5 and 14 in the elementary schools. . . .

"The prevention of the social plagues is one of the intrinsic problems of our present school system."

Dr. Wile's statistics give some idea of the extent of the diseases among school children. He emphasizes existent evils and makes a plea for the fullest effectual work of the medical inspectors of school children, that the diseases when found be specifically called by name, and that preventive means be radically enforced. He says, further:

"Prophylaxis means increased attention to school hygiene. Drinking fountains must supplant the foul drinking cups. Individual towels are absolutely necessary. Pencils, sponges, books must be individualized; and the children must be impressively instructed not to lend them to each other and . . . to avoid putting such articles in their mouths. Toilet facilities should be improved. The toilets

of the two sexes must not be . . . within earshot of each other. . . . Complete physical examinations should be required. . . .

"Manifestly, children who are a source of contagion to others must be excluded from school . . . until they are no longer a menace to the health of their fellow school children.

"Boston, Philadelphia, Chicago exclude the children when the diseases are . . . recognized by the medical inspectors. . . .

"Medical inspection must progress so as to be of greater value. The classification of the defects of school children should . . . be placed upon an ætiological basis."

WILLSON, Robert N. The economic relations of social diseases. Pennsylvania medical journal, 15: 843–55, August 1912.

Has the public "a right to demand instruction regarding the many more than 100,000 infected sufferers supposedly intermingling in the homes and lives in every city . . . ?

"The richest and the poorest strata of society [are] the two most thoroughly saturated with these poisons. . . .

"What do we hear of the blind asylums, 20 per cent of whose inmates are there because of gonococcus birth infection; . . . of the insane asylums with 85 per cent and upward of the cases of paresis due to syphilis; and over in the nervous wards a very like percentage of cases of locomotor ataxia due to the same disease? . . . What of the children's wards in hospitals, never free from little children who are infected; . . . of the general wards . . . full of the debilities . . . the marasmus, the idiocies, the apoplexies, the epilepsies, the club feet, the hare lips, the maimed and crippled special senses. . . .

"We are officially informed that in our army of about 60,000 men not less than 20 per cent of all upon the sick list are instances of venereal infection. . . . For the navy and marine corps . . . for all venereal diseases the primary admission ratio was 199.17 per 1,000."

"In the Public health and marine hospital service . . . about 1,300,000 [patients have been treated] in the last 20 years. Of these, 106,090 were cases of syphilis; . . . 4,420 constituting the average per year; . . . 117,336 cases of gonorrhea, with an annual average of 4,889 cases. . . .

"No reference has been made to the new wave of venereal infection brought to this country each year from the continent. . . . Last year 223,453 immigrants came from Italy alone, 123,348 from Poland, 84,000 Jews, 71,000 Germans, 52,000 Scandinavians, and many others; . . . not one of the entire number having been examined for the presence of venereal disease—and all admitted through a wide-open physical gate."

IN REPRESENTATIVE CITIES.

BERKELEY, CAL.

HOAG, Ernest Bryant *and* **HALL, Ivan C.** A preliminary report on contagious diseases in schools. American academy of medicine. Bulletin, 13: 81–87, April 1912. charts.

Reprinted.

"The necessity for the correction or control of such physical defects as those of hearing, sight, circulatory disorders, obstruction of the nose and throat, as well as certain deformities, such as those of the spine, chest, feet and legs, might often be avoided, if proper attention to the contagious diseases of childhood were given serious consideration during school life.

"The principal points then to be considered in relation to contagious diseases in schools are:

"1. The direct effects of the diseases themselves.

"2. The direct or indirect effects of such diseases in producing physical 'defects.'

"3. The relation of these diseases to retardation and elimination.

"4. The cost to the school department through decrease of average daily attendance, on which appropriations are often in part based.

"5. The cost to the family for medical treatment, nurses, etc.

"6. The cost to the individual through general lowered vitality or direct physical disability of one sort or another.

"In order to study with any degree of accuracy the effects of contagious diseases in schools, certain accurate methods for keeping records must be devised and carefully followed. For the purpose of illustration the following method is presented as having proved satisfactory in the schools of Berkeley.

"1. Every case of contagious disease is reported to the city health department and here recorded by the card-index system.

"2. The health department notifies the school department in each case, and a similar record is made here.

"3. The school department notifies every principal of a school in whose district a contagious disease is reported.

"4. Every principal inquires carefully into the cause of continued absence on the part of the pupil, and notifies the school department of every contagious or suspicious disease which first comes to his attention.

"By this cross-checking method there remains very little chance for any contagious children's disease to fail of being reported and properly recorded.

"5. A *contagious disease map* is made of the entire city and arranged by school districts, thus indicating at a glance where the *focus of infection* for any given disease exists.

"6. Various tables and curves are made indicating the contagious status of each school.

"7. Other tables and curves may be made to any extent desired, showing such points as age distribution of contagious diseases, mortality rate, time lost, cost of sickness to family or school, relation to weather or season, relation to ventilation in home or school, relation to vacations, and relations to any other things which may be deemed important or interesting.

"The relation between physical defects and contagious diseases is a problem which will prove of value if followed out carefully, but it is very difficult to obtain accurate data. . . .

"By means of the method indicated I have with the aid of Mr. Ivan C. Hall . . . been able to determine some interesting data in respect to contagious diseases in the Berkeley schools. It will be possible . . . to summarize only a portion of our results, in the hope that this may prove suggestive to other localities. Our numerous tables and curves will have to be mostly omitted. . . .

"The death rate from all causes in Berkeley from 1906 to 1910 inclusive shows an average of 11.8 per 1,000 of population. The total rate has fallen from 15.1 per 1,000 in 1906 to 9.4 per 1,000 in 1910, a reduction of 37.7 per cent. The death rate in Berkeley for 1910 was lower than the average for the state, which was 13.6 per 1,000. . . .

"This paper would particularly emphasize the importance of accurately collecting data and exhibiting it as far as possible in a graphic form by means of charts and the plotting of curves. By this means information can be instantly grasped and the problem much more easily solved. Once facing the situation in any community in respect to transmissible diseases in schools the prophylactic or other measures necessary to put into use may be easily applied."

BOSTON, MASS.

Boston. School committee. Report of the Commission appointed . . . to investigate the problem of tuberculosis among school children. Boston, Printing department, 1909. 11 p. illus. 8°. (School document no. 2, 1909)

"Five thousand is a conservative estimate of the total number of tuberculous children in the public schools of Boston."

HARRINGTON, Thomas F. The superintendence of infected children when out of school and the conditions of their readmission to school. *In* III[e] Congrès international d'hygiène scolaire, 1910. Rapports. v. 1. Paris, A. Maloine, éditeur, 1910. p. 272–82. charts. tables.

Chiefly, in Boston.

"The communicable diseases that are of special consideration in school life fall into three general classes: (1) Zymotic diseases; (2) tubercular affections; (3) contagious skin diseases.

"Medical inspectors and school nurses have done much to detect, exclude, and follow up these foci of infection. Board of health inspection has not availed much in controlling the quarantined cases in the homes. . . . A system which promises high results in measures to control infected children excluded from school has been inaugurated in Boston by the district nursing association. Nurses have been appointed for the specific purpose of supervising in the homes supervised cases. . . . She keeps in close touch with the home by repeated regular visits—instructing, observing, and guiding the family during the entire period of quarantine. . . . This special corps of nurses does not enter the schools but keeps closely informed about school diseases in the district. . . .

"In diphtheria quarantine the problem is more difficult.[1] One per cent of well persons carry typical diphtheria bacilli of the morphological type which give a positive laboratory diagnosis. . . .

"The belief that scarlet fever and diphtheria are spread by school attendance principally is not supported by reliable data. . . . The decline in the morbidity . . . starts before the school closure and the increase in the number of cases begins before the opening of the fall term of school. . . .

"Tuberculosis is seldom of such a quantity as to require supervision out of school. . . . In an examination of more than 90,000 children in the Boston public schools showing more than 5,000 anaemics, glandular, and undersized children, there were only 156 cases of tuberculosis. . . . Genuine pulmonary tuberculosis, as well as open tuberculosis of bones or skin, should be excluded from regular schools. . . . In Boston such cases are segregated into a hospital school which permits the child to return to his home each evening."

SLACK, Francis Hervey *and others.* Diphtheria bacillus-carriers in the public schools. American medical association. Journal, 54: 951–54, March 1910. tables. map.

"An entirely new procedure . . . when, acting on the suggestion of Dr. Richard C. Cabot, the school board suggested, under advice of its committee of physicians, the taking of cultures at the beginning

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[1] *See* Slack, Francis Hervey *and others* (following reference).

of the school year from all the pupils in the Brighton district, and the keeping from school of those found to be bacillus-carriers."

The estimated number of pupils was about 4,500, just 99 cases, or 1.16 per cent (positive). The author gives the following conclusions:

"1. At least 1 per cent of all healthy school children are carriers of morphologically typical diphtheria bacilli (Westbrook's A, C and D types). 2. Such bacilli are communicable . . . and the condition is usually a transient one. 3. The organisms are ordinarily of little or no virulence. 4. While it is possible that by passing through a susceptible individual their virulence might be raised to cause the disease, this is not a frequent occurrence. 5. The disease is kept alive in a community rather by virulent organisms in immune persons than by these non-virulent bacilli. 6. Where virulent diphtheria bacilli are present, as shown by outbreaks of the disease, . . isolation of those showing positive cultures is a duty owed to the community. 7. Where the disease does not exist, isolation of carriers of probable non-virulent bacilli is of no proved benefit. . . . 8. The attempt to control diphtheria in a city by a round of cultures from all school children at the beginning of the school year does not seem encouraging from this series of tests. 9. The proposition to stamp diphtheria out of a city by cultural tests of all the inhabitants and isolation of all carriers is impossible from any practical standpoint."

CHICAGO, ILL.

Chicago. Department of health. Municipal laboratory. Diphtheria carriers in schools. *In its* Report, 1907–1910. p. 11–12. table.

"Of 6,468 school children examined during the year 1910, during the diphtheria epidemic of November and December, 744 or 11.96 per cent were at the time of culturing nonsick carriers of morphologically typical Kiebs-Loeffler bacilli. . . . The largest number of positives found in a single room was 22, including the teacher, out of 25 persons. . . . The longest duration of a single case was six weeks. The average time in which the bacilli disappeared from the throat was 8.23 days."

All positive cases were placed in quarantine, and a placard marked "Diphtheria carrier here" was posted on the premises. "The effectiveness of the control of diphtheria by isolation of carrier cases may be judged from the fact that after about five weeks . . . the epidemic was effectually stamped out."

CINCINNATI, OHIO.

BOUDREAU, Frank G. Epidemic poliomyelitis. Ohio. State board of health. Monthly bulletin, 2: 71–78, March 1912.

"The measures adopted by the health department of Cincinnati seemed to me to be particularly well adapted to our knowledge of the disease and what we can with justice enforce, without being too arbitrary or too lenient I commend them to your attention.

"'PREVENTIVE MEASURES.

"'All cases are required to be reported to the health office. Any case of any meningeal affection is investigated, lest it might be a case of infantile paralysis, and any such case that in the opinion of the investigator seems suspicious, is treated as a case of infantile paralysis.

"'The house in which such cases occur are placarded with a sign, stating that there is a contagious disease within.

"'All children connected with a school are removed from school for a period of three weeks.

"'The patients are isolated as much as possible, and especially are children kept away from a case.

"'Those who have been exposed are kept away from children as much as possible, and isolated, with the exception that "bread winners" are not kept away from their work.

"'In case of death the funeral is required to be private and must take place within 24 hours. . . .'"

CLAIRTON BOROUGH, PA.

COLCORD, A. W. Diphtheria epidemics and the public school. American medicine, n. s., 7: 245–52, May 1912. illus.

Epidemic in Clairton Borough, Pa., of 22 cases, of which 18 were pupils of the public schools. Features of the epidemic:

"1. Schools were not closed, but children were daily assembled and kept under observation. 2. Systematic and frequent examination of all throats in the public schools. 3. Cultures taken of all suspicious throats . . . examined at the expense of board of health. 4. Finding of 'diphtheria carriers' and the quarantine and giving of antitoxin to the same. 5. Both cases of 'carriers' occurred in families where several children had been sick and no physician had been in attendance. . . . 6. No case occurred in room after the finding and isolation of the 'carriers.' Whole epidemic was soon stopped."

EAST ST. LOUIS, ILL.

East St. Louis. Board of education. Medical inspection. *In its* Annual report, 1910–11. p. 47–48.

"We hope that we may have medical supervision in our schools in the near future. It seems fair and right and the consequent advancement of children when relieved is so much greater and the time spent in school so much less, that the board of education really gains from a money point of view.

"A complete plan of inspection would include (*a*) an annual or semiannual examination of every school child, with especial reference to: (1) Defects in eyes, ears, nose, mouth, and throat; (2) lungs and chest; (3) spinal system; (4) general strength; (5) nervous force. (*b*) Daily examination of children who give signs of illness, to prevent the spread of contagious diseases. (*c*) An annual inspection of the sanitary condition of each school building. Trained nurses to visit the homes of poor children, who are ill, would be a logical part of such a system."

A table of contagious diseases. For teachers and parents, p. 76–77.

Contagious diseases.—Table for teachers and parents.

[NOTE.—Pupils having any of these diseases are by law excluded from school. A board of health certificate is required for the first four diseases. In other cases admit to school with physician's certificate, or sometimes with mother's certificate, in accordance with the time given in this table.]

Disease.	Period of—		Quarantine.			Symptoms.
	Incubation.	Invasion.	After exposure.	After attack.	Do not admit to school until—	
	Days.	*Days.*	*Days.*	*Days.*		
Diphtheria	2–7	.....	12	12	.....	Gray or brown patches on tonsils, white membrane in throat, bloody or irritating nasal discharge, enlarged glands at side of neck, fever sometimes croupy cough; some say may be carried in clothing.
Scarlet fever	2–7	1–2	14	30	After sore throat and scaling of skin disappears.	Vomiting, sudden fever, red sore throat, red tonsils, enlarged papillae on tongue, flushed skin, fine scarlet rash on chest and neck in from 12 to 36 hours, sometimes pale ring about mouth. Most contagious from scales of skin from ninth to forty-second day. Often carried in clothing.
Smallpox	9–12	2–3	18	18	All scabs have disappeared.	Chill, headache, vomiting, pains in back, rash like scarlet fever or like measles fourth day rash on forehead. May be carried in clothing.
German measles	8–16	Few hours.	7–10	12	Three days after recovery of last case, with certificate; 14 days without.	Rash, catarrh, slight fever. Mild scarlet fever resembles this; be careful.
Measles	8–14	4	16	12		Watering eyes, sneezing, nasal discharge, cough, sometimes sore throat, rash on back of neck and forehead, small dark red spots, fourth till seventh day; skin peels eighth till thirteenth or eighteenth day. May be carried in clothing.
Chicken pox	13–16	Few hours.	12	14	All scabs have disappeared, 14 days after recovery of last case in family.	Small red pimples on face; vesicles filled with turbid serum changing to black or brownish crusts on body or scalp. Smallpox may be mistaken for this disease.
Mumps	14–21	.....	.....	20	Seven days after swelling and tenderness disappear.	Neck glands swollen, lobe of ear raised, chewing and sour tastes painful, headache, vomiting, depression. Seldom contagious before symptoms appear. Rarely, if ever, carried in clothing.

Contagious diseases.—Table for teachers and parents.

Disease.	Period of—		Quarantine.			Symptoms.
	Incubation.	Invasion.	After exposure.	After attck.	Do not admit to school until—	
	Days.	*Days.*	*Days.*	*Days.*		
Whooping cough.	6–10	1–4	.....	42	After end of spasmodic coughing.	A hard cold for 10 days, spasmodic cough, whooping tenth to fortieth day, thick nasal discharge, vomiting, nosebleed. Rarely, if ever, carried in clothing.
Influenza (grip)..	1–7	.....	.....	.....	.....	Chill, fever, vomiting, more sudden onset and slower recovery than common colds; contagious. Usually send home children with fresh sudden sneezing colds; if not sent home, children with colds should be seated in front row.
Sore eyes, pink eyes.	.....	.....	.....	.....	Till cured or certificate.	NOTE.—Many eye diseases are contagious; do not take risks; beware of towels and handkerchiefs.
Ringworm	.....	.....	.....	.....	.....do.....	Parasitic, bald patches on scalp, scabby patches on body. Recommend that a physician be consulted.
Impetigo, contagiosa.	.....	.....	.....	.....	.....do.....	Parasitic, rough, scabby sores, especially when skin has been broken; beware of towels. Recommend that a physician be consulted.
Lice (pediculosis).	.....	.....	.....	.....	Till cured.....	Recommend three applications of lard and sulphur, or crude petroleum, soap suds following; fine comb with vinegar for nits.
Itch (scabies).....	.....	.....	.....	.....	.....do.....	Parasitic, itching sores on wrists, back of hand, and between fingers. Recommend applications of lard and sulphur, or crude petroleum.
Tuberculosis.....	.....	.....	.....	.....	Till cured or certificate.	"Loss of appetite, weakness, languor, listlessness, are among the early signs. Pallor, marked anaemia, loss of weight, excessive emaciation, the presence of enlarged glands in the neck, are indications that there is something wrong. If in addition to this there is a cough, with or without sputum, the child should most certainly be examined by a physician."
Tonsilitis.....	.....	.....	.....	.....	Till cured.....	

Incubation is the time between exposure and first symptoms. Invasion is from first symptoms to eruption or marked disease.

Please notify the superintendent and school physician in writing of all known cases of tuberculosis, epilepsy, St. Vitus dance, and eczema. In center schools require a certificate from the superintendent or a physician in all cases of peeling hands. Colds and influenza are probably contagious. Exclude pupils with sore throat until cured or until they bring a certificate.

Look out for second crop of measles in school eight days after the first outbreak.

Pupils exposed to mumps or whooping cough may attend school provided watch is kept for symptoms.

Pupils exposed to diseases "carried in clothing" may not attend school until after the days of quarantine as above, without a physician's certificate. Approved by East St. Louis board of health, July, 1911.

GREENSBURG, IND.

BLAND, Curtis. Report of diphtheria epidemic in Greensburg [Ind.] during the months of September and October, 1911. Indiana. State board of health. Monthly bulletin, 14: 147–49, December 1911.

"Out of a total of 872 cultures taken from grade and high-school pupils, September 30–October 6, 1911, 288, or 33 per cent, came back positive. This high percentage of 'carriers' . . . and the large number of contacts under quarantine . . . made us feel justified in keeping the schools closed."

All parts of the town were found to be about equally infested with "carriers." Without doubt the street carnival, held by the Eagles from September 11 to 16, inclusive, had served to distribute the diphtheria bacilli.

As soon as positive reports were received the "carriers" were quarantined. Eventually, 260 homes were quarantined, containing about 1,200 persons, and this in a town of 6,000. Out of 400 "carriers" found only 4 developed clinical symptoms of the disease.

Conclusions:

"1. To fight successfully an epidemic of diphtheria 'carriers' must be found and . . . with contact cases must be isolated. 2. A bacteriological examination of the throat must be made in order to discover the 'carriers.' This makes absolutely necessary the maintenance of a bacteriological laboratory of the State board of health. 3. That antitoxin bears the same relation to clinical diphtheria that water does to fire. If the antitoxin is used in time and in sufficient quantities . . . in the first 24 hours of the disease, the death rate is practically nil and there are no persistent bad after effects of the disease."

NEW YORK, N. Y.

BAKER, Sara Josephine. Inspection for the detection of cases of contagious diseases. *In her* The Division of child hygiene of the Department of health of the city of New York. 1912. p. 64–70. tables. insert. illus.

1. Each nurse visits each school in her charge before 10 o'clock each morning and inspects in a room set apart for this purpose all children referred by the teachers. 2. Children manifesting any signs or symptoms of an acute contagious nature, such as smallpox, diphtheria, scarlet fever, measles, chickenpox, whooping-cough or mumps, are referred by the nurse to the principal. Cultures are taken in every case of sore throat. If the child is not suffering from a contagious disease, it is notified to return to school and is given an official certificate to that effect. If a confirmatory diagnosis of contagious disease is made the patient is isolated, the apartment placarded with a notice of the character of the disease, and the case immediately reported to the division of contagious diseases, which thereafter assumes supervision and control. 3. Children affected with a contagious eye or skin disease are given a notice to take home to their parents.

HERRMANN, Charles. The prevention of the spread of contagious diseases in public schools. Internationales archiv für schulhygiene, 6: 1–15, October 1909. forms. tables.

Describes the method in New York City. The medical inspector visits each school every morning between 9 and 10 o'clock and examines: "1. Those pupils presenting any indication of contagious disease. 2. Those pupils previously excluded on account of contagious disease, who have returned. 3. Those pupils who have been absent for 3 or more days on account of sickness. Every morning each principal receives a list of all the cases of contagious disease which have been reported on the previous day. This list is sent to every classroom."

New York (City) Association of tuberculosis clinics. Significant features. *In its* Fourth annual report, 1911. p. 18–19, 35 (table).

In 1910 there were under observation 500 children. In January, 1911, there were 1,243 children under observation, an increase of 149 per cent. In addition, there were treated during the year 4,272 new cases and 1,293 old, making in all a total of 6,808 children treated, an increase of 2,103, or 45 per cent over the number treated in 1910. The establishment of additional children's classes is strongly urged.

PHILADELPHIA, PA.

ROACH, Walter W. The rôle of the school in the spread of scarlet fever. A lesson from one school in Philadelphia. American journal of public health, 2: 450–51, June 1912. diagram. map.

Reprinted.

Epidemic in the T. M. Pierce public school.

First case reported January, 1912; 6 cases followed in February. "There was no classroom inspection during this time, the school doctor under the rule calling each morning at the principal's office to examine

children referred to him by the teachers, who in the last analysis were the only medical inspectors in the classrooms, with the whole system depending upon their ability to primarily detect disease.

"The 'carriers' were undoubtedly in the school, hidden and unrecognized. Twelve more cases followed in March and . . . when the medical man began classroom inspections he picked up 7 cases in the school desquamating. If it had been a neighborhood epidemic, other cases would unquestionably have occurred among pupils attending the Walton and Belview Schools, but the cases point to one focus. The Pierce school building was fumigated, inspectors stationed at each entrance and the 1,400 pupils carefully examined. Suspicious ones were refused admission and investigated. . . . The whole situation was cleared up in a short time."

PROVIDENCE, R. I.

CHAPIN, Charles Value. The spread of scarlet fever and diphtheria in schools. American journal of public hygiene, 20: 813–17, November 1910. tables.

For the purpose of studying the incidence of these diseases in schools in Providence, R. I., sets of cards are kept—one set for scarlet fever and one set for diphtheria, with a card for each school. A table on page 816 shows the age distribution of the reported cases of scarlet fever and diphtheria in Providence for 21 years. The amount of disease increases until the first year of school attendance when it begins to fall off.

"While it appears to be true that the diseases under consideration rarely spread in schools, and that the schools are safer than the streets . . . it is probable that the rules in regard to the school attendance of children from families where these diseases exist, are in most of our cities, amply sufficient to prevent extension from reported cases. Disinfection of the school is, generally speaking, a useless procedure. The trouble comes not from the recognized cases but from the 'missed cases' and healthy 'carriers.' . . .

"The common drinking cup must go. The use of the slate encourages carelessness with the saliva. . . . The roller towel is almost as bad as the common drinking cup. . . . The use of modeling clay and sand, and much other kindergarten work, encourages personal uncleanliness. . . . If, however, the child is taught to wash its hands, and wipe them on its own towel, before touching the clay, and to keep the fingers out of the mouth while modeling he will learn that it is wrong to inflict his own saliva on another. By such teaching the spread of contagious diseases in school may be made even less than it is."

VALPARAISO, IND.

NESBIT, Otis B. Books as carriers of scarlet fever. American medical association. Journal, 59: 1526–28, October 26, 1912. table.

Conclusions:

"1. If books act as carriers, it is only immediately after being contaminated with the discharges of the patient; yet this investigation has failed to reveal a single instance of this kind. 2. Books that have been used by scarlet fever patients do not long contain the infection in such a way as to transmit the disease to man. 3. Any book which has been handled by a scarlet fever patient should be burned or fumigated."

Regarding epidemic of scarlet fever Valparaiso Ind., September 1908–June 1911, during which time "there were 400 cases, of which only 255 were reported to the city board of health, 145 were not reported and most of them were not subjected to quarantine regulations. Beginning in February, 1911, a special study of the epidemic was begun."

MEDICAL INSPECTION OF THE EYES, EARS, NOSE, AND THROAT.

GENERAL REFERENCES.

ALLEN, William Harvey. Eye strain. *In his* Civics and health. Boston [etc.] Ginn and company [c1909] p. 72–82. illus.

"For some time to come eye tests will find eye troubles by the wholesale in every industrial and social class, in country as well as city schools. In 415 New York villages 48.7 per cent of school children had defects of vision—this without testing children under 7—while 11.3 per cent had sore eyes."

ALLPORT, Frank. The examination of children's eyes, ears and throats. American school board journal, 41: 2, November 1910.

"This is a field that can be efficiently covered by the teacher, for . . . sufficient data will have been obtained to enable him or her to know that the child has passed either a satisfactory examination, or has some defect. . . . Examination consists in the ascertaining of a few simple facts as follows:

"1. Does the pupil habitually suffer from inflamed lids or eyes? 2. Does the pupil fail to read a majority of the letters in the No. XX line of the Snellen's test type with either eye? 3. Do the eyes

and head habitually grow heavy and painful after study? 4. Does the pupil appear to be cross-eyed? 5. Does the pupil complain of earache in either ear? 6. Does pus or a foul odor proceed from either ear? 7. Does the pupil fail to hear an ordinary voice at 20 feet, in a quiet room, with either ear? 8. Is the pupil frequently subject to 'colds in the head' and discharges from the nose and throat? 9. Is the pupil an habitual 'mouth breather?' If an affirmative answer is found to any of these questions, the pupil should be given a printed card of warning to be handed to the parent."

ALLPORT, Frank. The eyes and ears of school children. Medicine, 12: 258–68, April 1906.

Also in Vermont medical monthly, June 15, 1906; *in* Pediatrics, 18: 465–81, August 1906; *in* Internationales archiv für schulhygiene, 3:20–36, October 1906; *and in* American school hygiene association. Proceedings of the first, second, and third congresses. Published November, 1910. Springfield [Mass.] American physical education review, 1910, p. 218–31.

Read at third congress, 190[illegible]. Reprinted.

"In order to facilitate the work and bring it more fully before the profession, I secured at the New Orleans meeting of the American medical association the passage of the following resolution, both in the ophthalmological section and the house of delegates:

"Whereas the value of perfect sight and hearing is not fully appreciated by educators, and neglect of the delicate organs of vision and hearing often leads to disease of these structures, therefore, be it

"*Resolved*, That it is the sense of the American medical association that measures be taken by boards of health, boards of education, and school authorities, and, where possible, legislation be secured looking to the examination of the eyes and ears of all school children, that disease in its incipiency may be discovered and corrected.

"Since then these resolutions have been adopted by the Mississippi valley medical association and by the State medical societies of the following States: Minnesota, Colorado, Illinois, Montana, New York, Indiana, North Dakota, Rhode Island, Alabama, Michigan, Utah, South Dakota, Delaware, California, Massachusetts, Arizona, West Virginia, Kentucky, Louisiana, Nebraska, and Washington.

"The resolutions have also been adopted by the American public health association, by the State and provincial boards of health of North America and by the State boards of health of the following States: Kansas, Minnesota, Colorado, Wisconsin, North Carolina, Vermont, Illinois, Montana, New York, Indiana, Connecticut, Ohio, North Dakota, Rhode Island, Alabama, Pennsylvania, Maine, New Hampshire, Michigan and Utah. The resolutions have also been adopted by the State boards of education of the following States: Texas, Kansas, Minnesota, Colorado, Wisconsin, North Carolina, Vermont and Connecticut. Four State legislatures, Connecticut, Vermont, Colorado and Massachusetts, have incorporated this movement in a public law. . .

"Besides this the tests are being placed in operation . . . in hundreds of schools in America where they are not required by school authorities.

"Let me then ask you, and through you all boards of health and education, all legislatures, and all who are interested in the physical and moral welfare of our children, do you believe that bad vision and hearing constitute an important barrier to the reasonable and easy acquirement of an education? Do you believe that a vast number of children are thus embarrassed? Do you believe that a great benefit to the children, to society at large and mankind in general, would be effected if such physical defects could be detected and relieved? Do you believe that some such plan as I have proposed would be instrumental in largely relieving such defects. Do you believe such a plan to be practical, unobjectionable and inexpensive? . . . Then may I ask you still another question: Why do you not take up this work and carry it through?"

ALLPORT, Frank. A plea for the systematic annual and universal examination of school children's eyes, noses, and throats. *In* National education association of the United States. Department of superintendence. Proceedings, 1909. Published by the association, 1909. p. 112–16.

Discussion: p. 117–119 (Herbert Dana Schenck—New York State conditions regarding examinations)

Also in National education association of the United States. Journal of proceedings and addresses, 1909. p. 266–270; *in* Hygiene and physical education, 1: 228–33, May 1909; *in* Psychological clinic, 3: 67–70, May 15, 1909; *and in* Journal of the Minnesota State medical association and Northwestern lancet, 29: 347–50, August 15, 1909.

"About 50,000 American children are annually removed from school on account of physical inability to continue at work. . . . About 8,000,000 school children suffer from some eye defect, and about 8,000,000 from some ear, nose, or throat defect."

AYRES, S. C. Civic medical inspection of school children, with special reference to diseases of the eye, ear, and throat. Journal of ophthalmology and oto-laryngology, 6: 1–6, January 1911.

Also in Lancet-clinic (Cincinnati) 106: 652–54, December 23, 1911.

Brief historical references; and the work in Cincinnati, of medical inspectors (26 physicians) and the three school nurses who have supervision of 13 schools.

CHEATLE, Arthur H. The ears, nose, and throat of school children. *In* Kelynack, T. N., *ed.* Medical examination of schools and scholars . . . 1910. p. 179–91. tables.

Table given by Dr. Thomas Barr, of Glasgow, who was the first to draw attention to the subject in Great Britain. Shows the various results obtained by skilled observers in different countries up to September, 1889.

Statistics of defective hearing among school children.

Surgeon.	Place.	Children examined.	Found defective.	
			Number.	*Per cent.*
Sexton	New York	570	74	13
Weil	Stuttgart	4,500	1,501	33.4
Moore	Bordeaux	1,768	300	17
Bezold	Munich	1,885	414	22
Barr	Glasgow	600	166	27.7
Rohrer	Canton Zurich, 1899–1900	[1] 108,297	.....	[2] 11.7
Cheatle	Hanwell, England, district schools, 1902.	[3] 1,000	.....	about 50
Taussig	St. Louis County, Mo., 1909	2,000	.....	7.3

[1] Who had reached school age.
[2] Having ears in some way affected.
[3] Ages 3–16. Adenoids present in 434 children; 57 had permanent perforation of drum of ear.

NOTE:—Use in conjunction with this table, the table of Dr. Taussig, Psychological clinic, 3: 152, Nov. 15, 1909.

CORNELL, Walter Stewart. The prevalence of eye defects [in school children] *In his* Health and medical inspection of school children . . . 1912. p. 578–84. tables.

Bibliography on the eyes: p. 584.

Contains data showing the progressive increase of myopia through the higher grades. Statistics of Boston and Philadelphia schools, University of Pennsylvania, and the German city schools.

CORNELL, Walter Stewart. The prevalence of eyestrain in children. Monthly cyclopaedia and medical bulletin, 1: 114–19, March 1908. tables.

Reprinted.

The reports of examinations of the eyes of school children in Philadelphia, New York, Boston, London (England) compared.

CORNELL, Walter Stewart. Prevalence of nose and throat defects and defective hearing. *In his* Health and medical inspection of school children . . . 1912. p. 584–90. tables. fig.

From review of about 6,000 children, the following table may be formed:

Table showing prevalence of nasal obstruction.

	Children of the well-to-do.	Children of the poor.
	Per cent.	*Per cent.*
Young children	12	25
Children over 10 years	6	12

"Probably from the local irritation of ill-ventilated rooms, and partly from the flabby tissues resulting from poor food, the children of the slums suffer from nose and throat defects in at least twice the proportion of the children of the better classes."

New York (State) Department of health. Eye, ear, throat, and teeth examinations in schools. *Its* Monthly bulletin, n. s. 7: 70–71, March 1912.

"In rural districts it is not feasible as yet to employ physicians to make the inspection, but . . . the department of health has sent out the necessary test cards and report blanks for distribution among

the teachers, 13,854 all told. Full directions for making a test of eyesight and of hearing, and for inspecting and reporting upon the condition of the mouth, throat, and teeth accompany each set of cards. Whenever a defect is discovered it is properly recorded and the parent of the child is notified . . . and advised to consult a physician. A full record is kept at the school, and duplicates are sent to the health department. These examinations are to be made during school hours and the district superintendents are to be held responsible to see that teachers carry out the printed instructions."

SHAWAN, Jacob Albright. School activities in relation to children's eyes. *See* Appendix B.

STANDISH, Myles. Should the examination of the eyes of school children be conducted by the teacher or the school physician? *In* American school hygiene association. Proceedings, 1911. Springfield, Mass., American physical education review, 1911. p. 98–101.

Also in American physical education review, 16: 243–46, April 1911. *Title:* Should the examination of school children be conducted by the teacher or the school physician?

"The examination by the school physician if limited to the card-letter test would be of very little more value than where it is conducted by the teacher. . . . If the doctor's examination is to be better than the teacher's, it must be conducted with belladonna in the eyes to prevent accommodation. Such an examination . . . has no certain relationship to the question in hand, viz, Are the child's eyes exerting a deleterious effect upon the child's school life?

"If then neither the examination with the test-letter card, nor an accurate scientific examination . . . is to be relied upon as indicating what children should be advised to use glasses, to what shall we look for the most important factor in this decision? In no other direction than to the symptoms."

WHITE, Daniel W. *and* **Treibly, Charles E.** A brochure on trachoma. Ophthalmic record, 21: 223–51, May 1912. figs.

Bibliography: p. 251.

"A comparative estimate of the number of known cases of trachoma amongst the Indians of Oklahoma could safely be placed at 60,000 to 70,000, or about 60 to 70 per cent of the entire population (Indian) of the State. It can also be safely estimated that from 60 to 80 per cent of the Indian population of the United States have trachoma.

During December, 1910, there were over 600 examinations made of eyes of the pupils at the United States Indian school at Carlisle, Pa. Of this number, there were 414 cases free of trachoma, 37 suspicious cases, and 149 known cases of trachoma. Males under 10 are more susceptible than females. Females over 10 have shown more susceptibility than males. This has been found to be the case in all Indian schools.

IN REPRESENTATIVE LOCALITIES AND INSTITUTIONS.

ARIZONA.

MARTIN, Alice. A year's work at the Eye hospital of the United States Indian school, Phoenix, Arizona. Southern California practitioner, 25: 410–12, September 1910. tables.

There were 444 boys, and 390 girls examined. The following table shows the results obtained:

	Boys.	Girls.
Normal	65	56
Suspicious	56	32
Acute trachoma	167	137
Subacute trachoma	145	141
Old trachoma	11	24

The number of pupils suffering from complications was 17. Two hundred and sixty-five operations were performed on boys; 269 on girls. Of the total number of boys and girls in the school, 75 per cent had trachoma.

CALIFORNIA.

REINHARDT, G. F. The Infirmary and the Department of hygiene. *In* California. University. Biennial report of the President 1908–1910. Berkeley, The University press, 1910. p. 125–29. (University of California bulletin, 3d ser. vol. IV, no. 4, January 1911)

Tabulation of the eye conditions of 850 students; eye-examination, 1909–10, has become a part of the regular physical examination given to all matriculants at the university.

	Men.	Women.	Total.
Normal	125	64	189
Hyperopia	172	73	245
Simple hyperopic astigmatism	165	95	260
Compound hyperopic astigmatism	11	11	22
Myopia	39	21	60
Simple myopic astigmatism	36	17	53
Compound myopic astigmatism	16	5	21
	564	286	850

From the above table it will be seen that only 22 per cent of the students examined were normal.

CONNECTICUT.

Bristol. Board of school visitors. Eye test. *In its* Annual report, year ending July 14, 1911. p. xxix. table.

Pupils tested	1,927
High-school pupils tested	220
Per cent defective	7
Per cent of high-school pupils defective	11

"Once in three years the eyes of the pupils in the public schools are tested according to directions furnished by the Connecticut board of education."

MASSACHUSETTS.

COUES, William Pearce. The results of the clinical throat examination of 212 school children. Boston medical and surgical journal, 162: 215, February 17, 1910.

The children examined were in 4 different buildings and 6 different rooms. The ages were from 6 to 15 years. About 50 per cent were native born, a large percentage being girls. Of the 212 children, 153, or over 72 per cent, showed marked chronic tonsillar hypertrophy—so marked in a number of cases that the tonsils practically met in the central line. Of the whole number examined, 103, or about 50 per cent, showed markedly carious teeth. Of the whole number, 141, or 66 per cent, showed enlarged submaxillary glands.

Of the 153 children with chronic hypertrophic tonsils, 90, or 58.8 per cent, showed marked dental caries; 120, or 77 per cent, exhibited marked enlargement of the submaxillary glands.

"In the large percentage of chronic tonsil cases . . . three factors act to a large extent as predisposing causes: 1. Poor home surroundings; lack of fresh air and sunlight. 2. Improper and insufficient food and neglect of the teeth. 3. The wretchedly unhygienic conditions existing in some of our public schools."

Fall River. School committee. Medical inspection [1907–1911] *In its* Annual school report, 1911. p. 15–18. table.

Year.	Examined.	Found defective in sight.		Found defective in hearing.	
		Number.	*Per cent.*	*Number.*	*Per cent.*
1907	13,225	2,637	20.6	543	4.1
1908	14,452	2,526	17.5	477	3.3
1909	15,371	2,209	14.4	442	2.9
1910	14,782	2,291	15.5	395	2.9
1911	14,523	2,164	14.3	323	2.2

"The most important occurrence of the year in this line was the establishment of free clinics at the Union Hospital."

Massachusetts. State board of health. Directions for testing sight and hearing (in accordance with Chap. 502, Acts of 1906, as amended by Chap. 257, Acts of 1910)

"1. Tests will be made as early in the school year as possible, preferably in September.

"2. Made under the most favorable conditions, as nearly as possible under the same conditions, preferably in well lighted rooms, in the early part of the day.

"3. Testing done by the teacher of the class, and supervised by the principal to see that the conditions of the test are as uniform as possible for the different classes.

"4. Children wearing glasses will be tested *with the glasses*, and if found normal will be so recorded.

"5. Examine all children, but record as defective only those whose vision is 20/40 or less, in either eye.

"6. Report to the State board of education the whole number of children examined and the number found defective according to the standard given in No. 5."

MISSOURI.

SNEED, C. M. A report upon medical inspection in the Jefferson City public schools. Missouri school journal, 25: 535–39, December 1908. tables.

An examination of the eyes, ears, throat and nose conditions of 1,000 white children and 100 negro children.

	Normal.	Defective in vision.
White	635	365
Negro	81	19

A comparison was made between the percentage of defects found in the 116 examined in the high school and in 147 in the lower grades. The children of the high school showed visual defects in 40.51 per cent, while the children of the lower grades 29.43 per cent. Other defects were found in the 1,000 white and 100 negro children, as exhibited in the following table:

Defects.	Of 1,000 white children.		Of 100 negro children.	
	No.	*Per cent.*	*No.*	*Per cent.*
Mouth breathing	242	24.2	16	16
Frequent colds, etc	387	38.7	22	22
Pain after study	295	29.5	34	34
Wearing glasses	38	3.8	5	5
Eye defective:				
1 eye	138	13.8	7	7
2 eyes	227	22.7	12	12
Ear defective:				
1 ear	64	6.4	4	4
2 ears	13	1.3	3	3
Inflamed lids	175	17.5	11	11
Trachoma	83	8.3	1	1
Discharging ears	40	4.0	.....	.....
Earache	113	11.3	17	17
Cross-eyed	30	3.0	2	2
Tonsils large	86	22.8	1	1
Abnormalities	10	2.6	6	6
Goitre	13	3.6	1	1

Careful throat inspection was made upon only 377 children. The tonsils were considered enlarged if they were somewhat larger than an almond.

There were 551 cards of warning issued to pupils for the various defects found—74 out of the 423, or 17½ per cent, who reported having received cards, had consulted a physician.

This study, differently arranged and credited to Dr. Sneed and Guy Montrose Whipple, is also in Psychological clinic, 2: 234–38, January 15, 1909. The following table is from the latter publication:

	School work satisfactory.	School work unsatisfactory.
Vision good	469	166
Vision defective	228	137

TAUSSIG, Albert E. An investigation as to the prevalence of visual and aural defects among the public school children of St. Louis County, Mo. Interstate medical journal, 16: 721–31, November 1909. tables.

Also in Psychological clinic, 3: 149–60, November 15, 1909. *Title:* "The prevalence of visual and aural defects," etc.

Two thousand children were examined, about 30.6 per cent of whom had vision that was below normal in one or both eyes. A little over 14 per cent showed vision that was less than two-thirds of the normal in both eyes, children with vision less than half the normal in both eyes being a little less than 3 per cent of the total number examined.

Defective sight and hearing of public-school children (tables combined).

Year.		Visual defects.	Defective hearing.
		Per cent.	*Per cent.*
1870	Heidelberg	35.0	.....
1904	Edinburgh, Scotland	43.2	12.2
1907	Dunfermline	17.0	4.0
1907	Cleveland, Ohio:		
	Well-to-do district	32.4	5.2
	Congested district	71.7	1.8
1907	Massachusetts (omitting Boston)	19.9	5.8
1907	Boston and environment	30.7	7.7
1908	Boston	23.0	7.6
1906	New York City	31.3	2.0
1908	New York City, Borough of Manhattan	10.2	1.0
1909	Chicago	19.4	2.7
1908	Jefferson City, Mo.:		
	Either eye	36.5	7.7
	Both eyes	22.7	1.3
1909	St. Louis County, Mo.:		
	Either eye less than 20/20	30.6	[1] 7.3
	Both eyes less than 20/30	14.3	[2] 2.2
	Both eyes less than 20/40	2.8	.....

		Sex ratio.		Sex ratio.	
		Boys.	Girls.	Boys.	Girls.
1908	New York City	15.7	20.8	.....	.....
1909	St. Louis County	29.1	31.1	8.7	6.0
	Seriously defective	13.5	15.1	.....	.....

[1] Either ear. [2] Both ears seriously defective.

Conclusions derived from data of the children examined:

"1. Unrecognized or at least untreated defects of vision and hearing are nearly as common in our suburban communities as in large cities. Both call urgently for systematic medical inspection.

"2. Unrecognized adenoids, so extreme as to cause serious interference . . . were not found to be very common. In nearly 1 per cent of the children, however, the adenoids imperatively demanded operation. . . .

"3. Defective vision seems a little commoner among girls and defective hearing among boys. . . .

"4. In other communities a progressive increase in the prevalence of impaired vision was noted as the children grew older, whereas in St. Louis County the reverse was found to be true, both as regards slight and grave defects. . . . It does not, however, furnish an argument against inspection. . . . The fact that one-third of the children with spectacles wore unsuitable glasses is also suggestive in this respect.

"5. Our data show that to a certain, though not very great extent, the children with impaired vision or hearing progress more slowly in their school work than their normal fellow students. The evil effects of unrecognized physical defects go, however, far deeper than this. . . . Adequate medical school inspection would lead to the recognition and to a great extent, to the correction of such defects. . . .

"6. The marked divergence between the data obtained in different cities, or, in the same city, by different investigators, indicates the need for greater uniformity in methods of tabulating these statistics. . . . For statistical purposes it is important for the investigator to state just where he draws the line between defective and normal. As regards vision, hearing and adenoids, a division into slight and serious defects is to be recommended.

"7. In estimating the value of medical inspection of school children . . . the greatest benefit to be derived from inspection consists in the early recognition of contagious diseases and the prevention of school epidemics."

NEW HAMPSHIRE.

Manchester. School committee. [Medical inspection of elementary school children] *In its* Report, year ending December 31, 1909. p. 17–18.

Teachers annually test the eyes and ears, records being preserved.

Total tested	4,625
Defective vision	1,106
No vision in one eye	27
With one eye defective	359
Both eyes defective	720
With defective hearing	746
Deaf in one year	29
With one ear defective	364
Both ears defective	353

Of these 1,852 pupils found defective in vision and hearing, 823 are over age for their grades and 491 have failed one or more times to be advanced with their classes.

NEW YORK.

DRESBACH, M. Examinations of the eyes of college students. Medical record, 82: 190–95, August 3, 1912.

References: p. 195.

Cornell University. Examination of 3,326 enrolled men, and 360 examinations of women.

Men.

Percentage wearing glasses	27
Percentage wearing glasses constantly	3 or 4
Percentage of 842 wearing glasses needing change of lenses	40
Number blind or practically so in one eye	15
Number totally blind in both eyes (year 1911–12)	6
Percentage with weak accommodation (no glasses worn)	4
Total per cent with subnormal acuity	30
Percentage who have never consulted a specialist	40
Percentage with symptoms of eye strain (no glasses worn) approximately	25
Percentage showing symptoms, and glasses worn	22
Muscular imbalance of 5° or more (no glasses worn)	2
Nystagmus	1 case.
Diplopia	Several cases.

Women (360 examinations)

	Per cent.
Vision normal, both eyes	70
Hyperopic astigmatism	88
Myopic astigmatism	7
Unclassified astigmatism	3

Defects of 155 students from rural districts, attending for 12 weeks only.

	Per cent.
Hyperopic astigmatism	40
Myopic astigmatism	50
Unclassified	10

A questionnaire was sent out, and replies received from 105 institutions of learning, with the following results: Not requiring eye examinations, 22. Among these were 3 prominent schools of technology, 2 well known schools for women, and 1 great university. In about a dozen only is an eye specialist engaged. In 17 institutions estimates of students needing glasses ranged from 10 to nearly 100 per cent, the latter figure being from a Government school, "where, it is stated, practically every student wears glasses before he finishes his course."

SCHENCK, Herbert Dana. [Inspection in New York State of the eyes, ears, noses, and throats of public-school children] *In* National education association of the United States. Department of superintendence. Proceedings, 1909. Published by the association, 1909. p. 117–19.

"No systematic effort . . . for an annual record of the condition of the sight, hearing, and nasal operations has been made by even the most progressive cities [of New York State]. . . . At a conference of the health officers in the fall of 1906 . . . a plan, essentially that in vogue for ten years in Connecticut, for four years in Vermont, and for the last two years in Massachusetts, where the examinations are compulsory, was adopted."

Examinations were made by the teachers, and confined for that first year, to the incorporated villages. Of the 446 such villages, 425 made the tests.

"The number of pupils having their eyes, ears, nose, and throat examined in the 425 villages of the State was 105,767; 5,045 of these children were under 7 years of age and did not have their eyes tested. They, however, had their hearing tested and their nose and throat examined; 100,722 then had their eyes tested as well as their hearing and an examination of their nose and throat. A little less than 10 per cent of the 105,767 examined had defective hearing and earache or both with discharge from the ears." (Corrected from letter of Dr. Schenck of Jan. 22, 1912.)

VON SHOLLY, Anna I. Trachoma: Its prevalence and treatment, especially in relation to the New York City school children. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 115–24.

The school children of New York since 1902 "have been under constant and careful examination for this disease. Twice a year, an inspection is made of all the children of the public schools. All children whose eyes show an abnormal condition of the lower lids with lymphatic dilations and follicles (the upper lids are not examined by the school inspectors) are obliged to put themselves under the treatment of a physician and continue under treatment until discharged by him. They must show to the school nurse, twice a week, satisfactory evidence in the form of a dated dispensary card or a physician's certificate that they are under treatment. Children whose eyes show muco-purulent discharge are excluded from school until this has disappeared. . . . In 1902, the health department opened a free clinic and hospital for infectious eye diseases in the lower East Side—the district most infected. Since then, three additional free infectious eye disease clinics have been opened by the department. . . .

"The statistical report of the child hygiene division of the New York City health department is as follows: In 1902, 20 per cent of the children were affected; in 1908, 7 per cent; in 1909, 6 per cent; in 1910, 3 per cent.

"Depending on what we call by the name of trachoma, we may take our choice as to whether, for example, in 1910, there were 20,915 cases of trachoma or whether they were approximately 498 cases of trachoma and acute catarrhal conjunctivitis and 20,417 cases of varying degrees of folliculosis and follicular conjunctivitis.

"About two months ago, we started, experimentally, a free clinic in a room in one of the public school buildings . . . and twice a week all the children with infectious eyes from this school and the neighboring schools are brought for treatment in squads at an appointed hour during the school session."

PENNSYLVANIA.

Pennsylvania. Medical society. Report of the Committee on trachoma. Pennsylvania medical journal, 13: 58–59, October 1909.

Chairman, C. P. Franklin.

To about three hundred ophthalmologists a set of questions was submitted regarding trachoma. The following was included: "Is there, in your community, systematic examination of school children, or of employees in large establishments engaging recent immigrants?"

The answers showed that each ophthalmologist sees annually from 1 to 200 cases. Answers revealed the fact "that there was then no systematic examination of either children in the schools or adults in employment, particularly in the regions where so many alien-born exist."

Recommendations: "1. That medical inspection of schools and homes be established. 2. That medical inspection of alien employees be undertaken. 3. The introduction of a bill into the next legislature, declaring trachoma a disease requiring quarantine, such quarantine to be at the discretion of the proper medical authorities. 4. The subsequent introduction, in the same legislature, of a bill to establish a State trachoma hospital in or near Philadelphia. . . . 5. That this committee be continued, with power to act in carrying out the above recommendations."

POSEY, William Campbell *and* **McKENZIE, Robert Tait.** Results of the examination of students' eyes in the Department of physical education, University of Pennsylvania. American medical association. Journal, 48: 1010–13, March 23, 1907. figs.

Examination of 883 students, by "the ophthalmologist of the department . . . nine physicians, all trained ophthalmologists, and his assistants in various hospital services. . . .

"With the various classes divided into squads, these gentlemen prepared a short sketch of the ocular history of each student . . . regarding the existence of any known visual defect, headaches, ocular pain or fatigue after studying, or other symptoms which might be of ocular origin. Special inquiry was made regarding the wearing of glasses. . . . After these facts had been recorded on a card . . . the student passed to another assistant, who determined the range of accommodation and the degree of visual acuity . . by the Snellen type. Another examiner then noted the external configuration of the eyes and the pressure of any inflammatory condition or anomaly in their movements. On the com-

pletion of these tests the student entered a dark room, where . . . the ophthalmologist to the department carefully estimated . . . the state of the refraction and studied the condition of the interior of each eye.

"Of this total, 14.70 per cent were . . . myopic, while the remaining 85.30 per cent were either hypermetropic or emmetropic. Among 633 students in the two lower classes, 87.25 per cent were hypermetropic and 12.75 per cent were myopic, while of 261 students in the upper classes, 80.25 per cent were hypermetropic and 19.75 were myopic.

"Five per cent more of myopia was found in the professional department in scholars of a similar age than in the college department. . . . The average age of all . . . was 21.4 years, and the statistics showed an increase of about 2.5 per cent of myopia for each year during the four years of college life.

"Six hundred and nine had full visual acuity in each eye, 94 in but one eye, while 180 had subnormal vision in both. Three hundred and three students wore glasses; of these, 217 were hypermetropic and 86 myopic. Eighty-seven complained of headache. Of this number, 47 wore glasses and 40 did not. Of those complaining of headache, 7.59 per cent had subnormal vision, while the remaining 92.41 per cent had full visual acuity. . .

"Of the 883 students examined, 58, or 6.68 per cent, had spinal curvature or scoliosis, and this condition was found 48 times among hypertropes and 10 times among myopes Of the total number of students with spinal curvature, this vision of one eye was perceptibly lower than its fellow in 13.79 per cent. . . .

"As weak eyes are often associated with a physical condition which is below par, suitable exercise of a general nature is . . . insisted on for those who are so handicapped. . . . Violent exercises are forbidden myopes, and the endeavor is made in this class of subjects particularly to develop the chest and to impart a correct standing posture for the avoidance of scoliosis."

WESSELS, Lewis C. The standing in class of children with defective vision. Teacher, 16: 299–300, December 1912. chart.

The work of the Municipal eye dispensary, Department of public health and charities of Philadelphia.

There were examined for eye defects, "in the past four years, 5,146 children; . . . 3,695 or 72 per cent were backward, due principally to their defective vision, as the majority . . . started to progress after receiving proper glasses.

"The following table graphically shows the ages and grades of the children refracted at the Municipal eye dispensary.

Ages and grades of children.

Grade.	Age of pupils.												Above normal average age.	
	6	7	8	9	10	11	12	13	14	15	16	Total.		
													No.	*Per ct.*
8	.....	.....	.....	.....	.....	.....	.....	8	12	7	6	33	13	40
7	.....	.....	.....	.....	.....	.....	7	21	20	10	1	59	31	53
6	.....	.....	.....	.....	1	16	54	82	39	10	3	205	134	65
5	.....	.....	.....	1	39	112	183	141	55	21	.....	552	400	72
4	.....	.....	.....	56	196	235	264	224	69	15	1	1,060	808	76
3	.....	1	83	213	291	279	227	135	47	17	1	1,294	997	77
2	1	68	246	278	276	150	110	62	36	8	1	1,236	921	74
1	134	182	160	90	60	37	19	11	7	1	6	707	391	55
Total	135	251	489	638	863	829	864	684	285	89	19	5,146	3,695	72
Above normal	.....	.....	160	368	627	701	803	655	273	89	19	3,695	.....	.....
Average age percentage	.....	.....	32	57	73	85	93	96	97	100	100	72	.....	.....

Figures on the broken lines represent the position of the normal average school child.

"There are many interesting features connected with this table that are worthy of study. The 3,695 backward children represent a collective or a composite loss of 8,434 years or a money loss of $295,190, based on the actual cost of education, $35 per annum in Philadelphia. The cost to the child was considerably more.

"1,170, or 23 per cent, were in the average grades, and only 281, or 5 per cent, were above the average grades.

"The majority of the children were below the fourth grade; 4,297, or over 83 per cent, were below the fifth grade; only 1,909, or 37 per cent, were above the third grade; only 849, or 16.5 per cent, were above the fourth grade; only 297, or 5.75 per cent, were above the fifth grade; only 92, or 1.78 per cent, were above the sixth grade; only 33, or 0.64 per cent, were above the seventh grade."

TENNESSEE.

MINOR, James L. Some impressions of certain eye affections in the negro, as compared with the white race. Ophthalmology, 7: 36–38, October 1910.

Examination of the eyes of 1,849 negro, and 3,181 white pupils of the public schools of Memphis, Tenn. Results showed that refractive errors were just one-half as frequent in the negro as in the white pupils; proportion of normally seeing blacks 2½ times greater than whites; badly seeing negroes 1 to 15, badly-seeing whites 1 to 6; omitting uncorrected myopic whites, badly seeing whites were 1 to 10; no case of myopia found in the negr es.

UTAH.

BATES, Edgar. Eye strain among public school children. Ophthalmology, 8: 188–92, January 1912. chart.

Of two schools of Ogden, Utah, 890 were examined for eye defects. Those suffering from eyestrain, sufficient for glasses, numbered 184, of whom 134 complained of headaches; 57 of blurring words; 29 of sensory symptoms, as "smarting"; 21 of frequent lachrymation; 2 of seeing double; 3 of dizziness; 2 of spots before the eyes; 11 of difficulty of reading from blackboard; 17 of blepharitis; 17 of scales at roots of eyelashes.

"The question is not settled even with the wearing of appropriate lenses. It is really a question of preventive medicine . . . the question as to the necessity of medical examination of all public school children."

MEDICAL INSPECTION OF TEETH—DENTAL CLINICS.

GENERAL REFERENCES.

CORLEY, J. P. Oral hygiene. Inauguration of the present movement. Dental cosmos, 52: 1117–20, October 1910.

Describes the work of the National dental association's oral hygiene committee, which was commissioned to go into the public schools of the land and instruct the teachers and pupils in the care of the teeth and mouth. The writer says: "We undertook to put the work into cooperation of the dentists throughout the land; and . . . sent letters . . . to men who were conspicuous in their associations and asked if they would go into the public schools and present the matter to teachers and pupils, but we found that not one man out of ten would volunteer to to so. . . .

"The general plan consisted, first, of having dental inspection made in the schools throughout the land . . . . Many of the State associations have volunteered to do this. A triple chart record of the conditions which they find is to be made, one to be given to the National association's committee, one to the school board, and the third to the child, to be taken home to his parents. These charts show the actual conditions of the mouth.

"The examinations which have been made so far show that between 96 and 97 per cent of the mouths of school children need dental attention.

"After the inspection is made, the next thing is to establish a free course of lectures . . . . There are three sets of lectures—one for children, one for mothers, and one for the general public. After these lectures, free dental clinics are established where all children of the indigent poor can have free dental attention.

"The National committee has placed in my hands, as chairman of the southern branch hygiene committee, some funds, together with three clinical equipments to be used in this territory. These cost from $750 to $1,000 each, and consist of a complete dental office outfit . . . . Material is furnished, and to each child is given a tooth-brush and a package of dentifrice, and shown how to use the same."

GALLIE, D. M. The time, the place, and the work. Dental review, 25: 563–74, June 1911.

List of cities giving attention to school children's teeth: p. 566. Results of a questionnaire.

McCREARY, J. P. Dental inspection of public school children—the need of education of the masses along dental lines. South Carolina medical association. Journal, 6: 457–61, September 1910.

"The child's health, mental and physical, is a national asset . . . . Nothing can stop the adoption of dental inspection. It must come."

The writer says it is estimated that 4 children only in 100 have good teeth. "These estimates and statistics are alarming. A wise plan . . . would be to give these facts the widest publicity possible. This can be accomplished by (1) lectures, (2) pamphlets, (3) through newspapers, (4) examination of children's teeth in the schools."

National dental association—Southern branch. Report of committee on oral hygiene. Dental cosmos, 52: 1103–05, October 1910.

Chairman, J. P. Corley.

"Our committee proposed to establish hygiene headquarters in one representative city, in as many of the cities in the southern territory as we could reach . . . . To this end the chairman was commissioned to visit these cities and endeavor to get the local societies to undertake the work of organizing their cities after the Cleveland plan.[1] This plan consists in making a dental inspection of all the public schools, delivering a course of lectures in the schools, and establishing and maintaining a free dental clinic where all the children of the indigent poor who are public school pupils can have free dental service. . . .

"It is the intention of the committee to submit at the Denver meeting, a plan whereby every section of the country can be effectively and systematically reached with the gospel of oral hygiene."

WOODRUFF, Clinton Rogers. The city and the children's teeth. American city, 6: 479–81, February 1912.

Philadelphia's school dental clinic, city hall, has one chair; opened in October, 1910. More than 3,500 children were treated during its first year. Newark dentists maintain 2 dental chairs. Rochester, N. Y., dispensary was maintained in a public school, treating in one year, 1,700 children. New York City has 18 clinics distributed through the 5 boroughs; of these, 3 are maintained by the Children's aid society and the others are connected with general dispensaries or dental colleges. In recent examination of 400,000 pupils, New York City schools, it was found that nearly 300,000 needed dental treatment.

IN REPRESENTATIVE CITIES.

CONNECTICUT.

WATERBURY. Board of education. Inspection of teeth. *In its* Annual report, January 1, 1910–January 1, 1911. p. 17–21. tables (of eight public schools)

Begun in June, 1910, by the Waterbury dental society, systematic inspection of teeth of all public school children of Waterbury.

Summary: Grades 2–9.

Total pupils		3,736
Condition of mouth	(good)	2,007
Do	(bad)	1,735
Condition of gums	(good)	2,905
Do	(bad)	853
Use of brush	(yes)	1,646
Do	(no)	2,100
Teeth filled	(yes)	589
Mal-occlusion	(yes)	1,679
Teeth decayed		19,912

(5⅓ per cent to each pupil.)

ILLINOIS.

East St. Louis. Board of education. Dental inspection. *In its* Annual report, 1910–11. p. 48–52.

The East St. Louis dental society, through its committee on oral hygiene and prophylaxis, reports its initial examination of 4,796 white children, and 432 colored.

Rules and requirements for examination (p. 49–51):

"First. Men must report at schools at 8 a. m. that they may get ready for the work before school opens, it being necessary to explain to the teacher what we expect and how they can aid you.

"Second. Each examiner must have an assistant to help keep records and care for instruments.

"Third. Each examiner must provide the following: (1) Only three mouth mirrors. (2) Two pairs pliers and lead pencil. (3) Cotton holder and cotton. (4) One alcohol lamp for warming mirrors for use. (Dries off alcohol and also prevents condensation of breath.) (5) Two glass tumblers, one for carbolic solution and the other for alcohol. (6) One dish for soap and water for scrubbing mirrors. (7) One cake of toilet soap. (8) Towels and napkins. (9) Carbolic acid and alcohol. (Furnished by the board.) (10) Files will be furnished for filing blanks when finished by assistant. (By the board.)

"Fourth. Examinations must be made by mirror only.

"Fifth. No examination with explorers will be permitted.

"Sixth. In marking the records, follow the chart.

"Seventh. If fair, mark the letter 'F'; if in bad condition, mark the letter 'B'. Mark same for the condition of the gums. If they use toothbrush, the word 'yes' or 'no'.

"Eighth. In marking diagram, start at upper right hand side of mouth, which corresponds with No. 1 of the permanent teeth and letter 'A' of the deciduous teeth. If cavity is found, simply draw a

[1] *See under* Medical inspection of teeth and dental clinics.

line through tooth on the chart. If two or three cavities are found, draw a line through tooth lines through tooth on the chart.

"Ninth. Instruments must be cleaned in soap and water, and immersed in carbolic solution until needed; then dip in alcohol bath and pass through flame of lamp to dry and warm, but not hot enough to burn the child's mouth.

"Tenth. The blanks are to be placed in the hands of all children when starting work, for them to fill in name, age, school, and grade."

Number of white children examined		4,796
Those having brush	45 per cent.	2,196
Not having brush	55 per cent.	2,600
General condition of mouth:		
Good	33 per cent.	1,683
Bad	11 per cent.	547
Fair	56 per cent.	2,568
Teeth needing cleaning	75 per cent.	3,531
Irregular	18½ per cent.	893
Previous attention	7 per cent.	336
Permanent teeth extracted		102
Teeth needing attention		10,913
Temporary teeth needing extraction		1,816

A number of Hutchinson teeth, teeth with erosion, cleft palate, bad tonsils, and adenoids.

Lincoln School.

Number of colored children examined		432
Those having brush	30 per cent.	132
Not having brush	70 per cent.	300
General condition of mouth:		
Good	25 per cent.	100
Bad	20 per cent.	98
Fair	55 per cent.	234
Teeth needing cleaning	85 per cent.	384
Irregular	53 per cent.	.....
Teeth needing attention		1,276
Permanent teeth extracted		31
Temporary teeth needing extraction		113
Hutchinson teeth		13

INDIANA.

NESBIT, Otis B. Dental inspection at Valparaiso, Indiana. Oral hygiene, February 1911. figs. tables.

Reprinted.

Inspection of kindergarten, grade, and high school pupils, made by the dentists without compensation. Results were tabulated. A dental hygiene exhibit was installed in each school. The dentists put the teeth of children of one grade in condition, free, for those unable to pay.

TABLE 3.—*Showing number of cavities in permanent teeth and teeth in which they occur.*

Age.	Total.	6	7	8	9	10	11	12	13	14	15	16	17	18	19	22
First molar	1,389	36	49	127	159	166	151	113	142	149	99	91	62	32	11	1
Second molar	564	....	....	....	....	2	10	23	77	96	103	115	79	40	18	1
Third molar	14	....	....	....	....	....	....	....	....	....	....	1	2	7	4	....
Incisors	289	....	....	8	5	8	24	21	30	55	49	44	25	17	3	....
Bicuspids	320	....	1	4	9	4	4	17	43	49	51	58	45	29	5	....
Cuspids	23	....	....	....	....	....	....	....	....	4	2	10	6	10	2	....

By the middle of December, "The latest teachers' reports show that, of 772 pupils, 288 have had all work finished; 123 are being treated now, but their work is not completed. When it is, 411 pupils, or 53 per cent, will have hygienic mouths, and there are five school months yet to come."

NOTE:—The following is of interest regarding Dr. Nesbit's experimental work:

Scarlet fever and dental hygiene in Valparaiso, Ind. Indiana State board of health. Monthly bulletin, 15: 32, March, 1912.

During the epidemic of scarlet fever in Valparaiso, Ind., Dr. Otis B. Nesbit undertook to control its spread by the care of the school children's mouths and teeth; inspection was made without pay by the local dentists. In 976 mouths inspected, 4,796 cavities were found; 2,197 in the temporary teeth, 2,579

in the permanent, and but 116 of the 976 pupils, free from decayed teeth. The cleaning of the mouths of the school children was followed by a subsidence of the epidemic and a notable improvement in efficiency and general health. Work for teeth free to pupils too poor to make payment.

MASSACHUSETTS.

Boston. The Forsyth dental infirmary for children. Washington, The International congress for hygiene and demography, September 1912. [Boston, Massachusetts, The Wood, Clarke press] n. p. illus. tables. plans. 8°.

Founded by John Hamilton Forsyth and Thomas Alexander Forsyth, in memory of their brothers. Incorporated, 1910, by a special act of legislature; it "represents the first attempt on adequate scale to satisfy the requirements" [of the acute dental needs of children]. "It will offer opportunity to all deserving children under the age of 16 to obtain freely expert advice and care for their mouths. . . . Its functions will include not only care of the teeth, but also related oral conditions, including defective palates, adenoids, etc. . . . It will have to do in great part with the prevention of defects by oral prophylaxis. . . . It is expected to furnish valuable practical teaching in oral hygiene. . . . A research fellowship has been established."

Brookline. School committee. [Work done in dental hygiene during the year 1910] *In its* Report for the year ending December 31, 1910. p. 32–34.

Pupils of primary and grammar schools, Brookline, Mass. An increase of 12 per cent in the number of mouths rated in good condition, and a decrease in number of mouths rated in poor condition, of 30 per cent as compared with the first examination held January 28, 1907 (Dr. W. M. Potter).

KEYES, Frederick A. Institutional dentistry. Methods. Results. Boston medical and surgical journal, 167: 118–20, July 25, 1912. tables.

Dr. Keyes was requested by the Mother Superior of St. Vincent's orphan asylum, Boston, in November, 1910, to establish a dental infirmary for the care of the children's teeth. Two children were installed as assistants, a great aid in inspiring confidence in the children needing treatment. Monthly lectures were given to the upper grade children, in the schoolroom, and they were required to write compositions after lectures, as aid to the hygienic teachings. Morning and evening tooth drill was instituted, prize given to child with cleanest mouth at end of month, separate brushes and tooth powder placed in cabinet containing 250 compartments. These were inspected monthly. Every three months the children were lined up and inspected by the dentist, a separate mouth stick being used for each child—just taking two hours to inspect the children in this manner.

The following statistical table shows the "relation of oral prophylaxis to infectious diseases:

Record of infectious diseases in St. Vincent's Asylum.

	1907–8	1908–9	1909–Nov., 1910	Nov., 1910–Apr., 1911	Apr., 1911–May, 1912
Diphtheria	6	2	1	0	0
Mumps	8	3	10	4	0
Scarlet fever	17	8	12	8	0
Pneumonia	3	5	4	6	0
Measles	24	50	40	25	0
Tonsilitis	19	16	8	3	0
Whooping cough	7	2	2	0	0
Chicken pox	15	17	10	6	0
Typhoid	0	0	0	0	0
Croup	4	0	0	0	0
Spinal meningitis	0	0	0	0	0
Scarletina	.....	.....	0	0	0
Bright's disease (acute)	.....	.....	.....	.....	0
Hemorrhage	.....	.....	.....	.....	0
Tuberculosis of eye	.....	.....	.....	.....	1
Tuberculosis of lungs	.....	.....	.....	.....	1
Total	103	103	87	52	2

"In the year 1905–6 the home was in quarantine for over three months—an epidemic of scarlet fever of over 75 cases.

"A comparison . . . will show that in six months after work was begun . . . the ratio of infectious diseases was reduced 59 per cent; and that in the subsequent year this ratio was reduced to approximately 2 per cent. . . .

"Is this absolute elimination of disease for a period of twelve months a coincidence? It may be so. . . . But certainly no such condition ever existed in St. Vincent's asylum prior to the installation of a dental infirmary."

MICHIGAN.

BUNTING, Russell W. Report of the examination of the mouths of 1,500 school children in the public schools of Ann Arbor, Michigan. Dental cosmos, 51: 310–22, March 1909. tables.

A report of examination made in 1906, 1907, for the compilation of various dental statistics in connection with anthropological measurements made upon the same children by Dr. Robert Bean. Examinations were made of 1,525 children, from 5 to 17 years of age. Two kinds of records were taken, a dental chart and an anthropological chart.

"From the data thus collected we endeavored to ascertain whether or not there were any correlations between the child's physical or mental development and the time of eruption of the teeth or the amount of dental caries present; also whether the caries and the teeth eruption were influenced by the type of the individual."

The distribution in the mouth of the 2,068 carious teeth noted (negroes omitted) is shown, there being in the lower jaw 1,167 cases of caries as against 901 in the upper jaw; "in the lower right first molar, 10 per cent of the number erupted at 6 years of age were found to be carious. The percentages steadily increase . . . until in the sixteenth year there are in the upper jaw from 35 to 40 per cent of carious first molars . . . more than one in every three examined, and in the lower jaw the same tooth at that age has 70 per cent affected, or two out of every three examined. . . .

"The upper incisors show a steady increase in their percentage of caries from the eleventh to the sixteenth year, and at the latter age the centrals have the very high percentage of 35, while the laterals show about half that number. The lower incisors exhibit but little caries at any of the ages examined.

"In the bicuspids there appears to be decided advance in the number decayed between the fifteenth and the sixteenth year, and the upper bicuspids at all ages exhibit about twice as many cases of caries as are found in the same teeth in the lower jaw.

"The canine is seldom decayed in either upper or lower jaw, but the second molar at the age of 16 has between 20 and 30 per cent of the total number affected by caries."

A special study of the 60 negro children of Ann Arbor, and the 112 negro children and 61 white children of Detroit, was made. In the whites, 9.2 per cent of the teeth erupted were decayed; in the negroes, 6.2 per cent.

Percentage of caries in the various types.

Types.	Boys.	Girls.
Blondes	8.1	6.6
Intermediates	7.5	11.7
Brunettes	7.7	9.2
Negroes	2.3	1.4

Other tables are: Stature weight in relation to eruption: Boys, girls. Stature weight in relation to caries: Boys, girls. Brain weight in relation to eruption: Boys, girls. Brain weight in relation to caries: Boys, girls.

Teeth of girls erupt earlier than boys. In both sexes, individuals large for their age have more teeth present than the undersized or normal. The increase in the caries of the large children over that of the small is so marked, that it is probable there is some cause other than the presence of more teeth.

A great many children with large heads, who were said to be very advanced mentally, were found upon examination, often with mouths full of caries and irregularities. There were 142 cases of malocclusion; 18 cases of very badly developed teeth, and between 30 and 40 cases showing pits or grooves in the incisors and bicuspids.

NEW YORK.

BARLOW, Peter C. Free dental clinic for children in the city of New York. Oral hygiene, 1: 859–62, November 1911.

Out of 266,426 children examined during 1910, in the public schools, 94,630 were found to have defective temporary teeth, while 69,620 had more or less serious defects of the permanent teeth. Over 20,000 cases have been treated.

FAIRCHILD, Beatrice C. The origin, history and progress of some of the dental clinics in New York City. Items of interest, 32:524–29, July 1910.

Prominent dental clinics are the St. Bartholomew's, Children's aid society, Industrial school, and Sullivan street school. At 449 East One hundred and twenty-first street, January 15, 1910, was inaugurated the first free dental clinic for public school children in the city of New York. Up to the present time the work is confined to public schools Nos. 39, 159, and 78.

KNOPF, Siegmund Adolphus. Dental hygiene for the pupils of public schools. New York medical journal, 96: 617–21, September 28, 1912. tables.

Reprinted.

A report on the facilities offered by New York public dispensaries for the dental care of school children. Letter sent to superintendents of the 34 important general and special dispensaries, asked four questions as follows:

"1. Does your dispensary have a dental department?

"2. If so, how many dental surgeons are in attendance, and for how many hours a week and at what time are they engaged in giving their services?

"3. Do the patients have to pay for the material for filling teeth, etc., or is it given gratuitously?

"4. If there is no dental service attached to your dispensary, would you be willing to establish one and arrange special hours for school children so that the time for visiting the dispensary may not conflict with school hours?"

The 33 answers appear in full in the report, of which the following is a summary:

Have dental facilities	15
Have no dental facilities	18
Are willing to establish dental department	8
Are unwilling or unable to establish one	9
Have asked for suggestions with a view to establishing one	2
Do only extracting	5
Do also filling	7
Do work gratuitously, or charge those able to pay	8
Charge for material used	7
Have hours suitable for school children	7
Have hours unsuitable	6
Are willing to increase or change hours	2
Are unwilling or unable to change hours	2

To the report comprising sixteen dispensaries independent or attached to hospitals, we must add that there exist three dental clinics maintained by the Children's aid society, kept fully employed with the care of the teeth of the children attending the society's schools. There is also one free dental clinic, being the health department's institution.

Rochester. Board of education. [Dental clinic established in the school building no. 14, by the Rochester dental association] *In its* Report, 1908–1910. p. 21, 22, 73.

In operation since February 23, 1910; probably the only school dental clinic in the world, in a school building. For the benefit of children of parents unable to pay for dental work. Permission granted to the society to open a second dispensary at school No. 26.

OHIO.

Cleveland. Board of education. [Report of the oral hygiene experiment made in the Marion school] *In its* Official proceedings, February 27, 1911. p. 44–59.

See also p. 42–43.

Reports of the oral hygiene committee of the National dental association, and others.

"With 97 per cent of the public school children in need of care and treatment, and with the worst oral conditions showing an improvement of from 37½ to 50 per cent in working efficiency, would it not be conservative to consider that with all . . . the mouths in good first class condition that there might be an average increase of at least 10 per cent in working efficiency for all the children in the schools? . . .

"The records of 1909 and 1910 show a registration of practically 65,000 pupils in the elementary schools and . . . we would show an expenditure of $170,625 a year to educate children handicapped by faulty oral conditions; but, in making the above estimate, our committees placed their percentage at a figure which they are positive is less than half of what actual tests would show. And, if we double the above amount we find that we are spending $341,250 per year to overcome the handicap of faulty oral conditions."

See also: Tabulations of the effect of dental care on the mental powers of the dental class, in Marion school, Cleveland, Ohio. Dental brief, 16: 779–782, October 1911.

EBERSOLE, W. G. A school "educational campaign" for oral hygiene of the National dental association.

Abstract of a lecture.

Abstract in American school board journal, 41:17, 18, 32, 34–35, 38, November 1910. Report form.

"In the public school, our educational system proposes, first, to make a cursory examination of each child, sending into the home a record of that examination, and bringing the parent or guardian a knowledge of a faulty oral condition. . . .

"The second step . . . is to put into the schools, when the examiner has finished and the parents and pupils are prepared for them, a system of lectures which explains the purpose, use, care and and treatment of the mouth.

"Third . . . is the establishment of the dental clinic . . . to make possible the securing of data which will show the value of the healthy oral conditions as related to the working efficiency of the child from the economic side of the question . . . from the school reports of the pupils, preceding and following treatment."

In the Cleveland, Ohio, Marion school, an experimental class was formed, of 40 boys and girls selected as having the worst oral conditions of all the pupils. Their school records for the six months preceding the test were taken, two psychological tests made before we began our work; the children furnished with toothbrush and powder and a dental nurse placed over them. Test meals given, the teeth all treated and filled, and a $5 gold piece offered as prize to each child faithfully carrying through the conditions of the test. Two psychological tests will be made during the time of test; and two will be made during the six months following treatment, with the school records, "and from these records it is expected to secure evidence which will show the value of dental service in dollars and cents."

NOTE:—For results, see following references.

Report of scientific experiments conducted in the Cleveland public schools for the purpose of ascertaining the value of healthy conditions of the mouth. Experiments conducted under the auspices of the National dental association, the Ohio State dental society, the Cleveland dental society and the Cleveland board of education. Cleveland, Ohio, Published and distributed by the National mouth hygiene association, April 1, 1912. 35 p. illus. tables. 8°.

Chairman of Oral hygiene committee of the National dental association, W. G. Ebersole, M. D.

In June 1909, 10 dentists and 10 nurses or attendants, began the inspection of the mouth conditions of the 846 children of the Marion school, Cleveland; out of the 846, but 3 were found to have teeth in perfect condition. Out of the entire number of dental charts, 40 were selected, as representing the worst mouth conditions, for the experiment. (1) They were to have their teeth put into perfect condition. (2) They were to brush their teeth carefully three times a day. (3) They were to masticate their food properly, not using liquid with solid food. (4) They were to attend any and every meeting of the class called and to conform to regulations laid down.

In mental efficiency the children made gain of 99.8 per cent shown by psychological tests, one given in May, one in June, one in August and one in September, 1910; last two given on the 4th and 10th of May 1911. Longest time spent on one phase of the work during a test, was less than three minutes. The children who needed the improvement most were the ones who made the greatest gains.

Individual records given.

WALLIN, John Edward Wallace. Experimental oral euthenics: An attempt objectively to measure the relation between community mouth hygiene and the intellectual efficiency and educational progress of elementary school children. Dental cosmos, 54: 404–13, 545–66, April, May 1912. tables. graphs.

Reprinted.

"The conclusion is strongly suggested that the desirability of establishing dental clinics in the public schools, for free inspection and treatment, should present itself to the taxpayer as a plain business proposition; . . . the paying of proper dividends on the capital invested in the schools. . . .

"We started out with a class of retardates and repeaters. During the experimental year only one of the 27 pupils failed of promotion. According to the best estimates there are 6,000,000 retardates (pupils over age for their grades) in the public schools of the United States. . . . About one-sixth are repeaters (pupils who must spend more than one year in one grade). It costs the country annually $27,000,000 to educate every sixth child over again; i. e., a second, third, or fourth time in the same grade. (Ayres)

"During the experimental year not a single truancy card was made out to these 27 pupils. . . . On the psychological side, the class showed an improvement . . . which amounted on the average to about 50 per cent. That a large part of this increased efficiency was *directly due to the mouth orthogenics* is attested by the parallel pedagogical improvement made by the pupils. . . . An efficiency improvement of 10 per cent . . . would amount to one school year in ten . . . and in the aggregate would save millions of dollars annually to the taxpayer."

WALLIN, John Edward Wallace. Experimental oral orthogenics: An experimental investigation of the effects of dental treatment on mental efficiency. Journal of philosophy, psychology and scientific methods, 9: 290–98, May 23, 1912.

The Cleveland experiment annotated elsewhere.

PENNSYLVANIA.

HARRER, W. F. Oral conditions in children as causative factors in disease. Dental cosmos, 51: 196–200, February 1909.

Examination of 247 public school children, Montoursville, Pa. Of 51, ages 6 and 7 years, but 8 had absolutely perfect first permanent molars. Of a total of 1,036 deciduous and permanent teeth, 436 were

defective; in 25 children the number of defective teeth exceeded the intact teeth; 8 children used toothbrush daily, and 4, occasionally.

In the 86 children, ages 8 to 11 years, of a total of 1,781 teeth, 627 were carious; about 1 pupil out of every 7 used the toothbrush daily.

In the 110 children, ages 11 to 15 years, of a total of 2,616 teeth, 636 were defective; toothbrush used occasionally by the majority of the children. In 25 of them, from 2 to 4 first permanent molars were decayed beyond help; 15 had good first permanent molars, nearly all filled, as well as the full number of teeth for their respective ages.

Those children whose deciduous teeth had received attention, showed healthy mouths, and "as far as could be learned, they possessed keen mental development. . . .

"In the children examined a number gave evidence of toxic infections. They were pale, listless, apathetic, gave a history of headache, and were unable to cope with their studies. In some pupils . . . from 1 to 3 years behind their proper grade, actually repulsive conditions of the mouth existed. These unfortunates were being deprived of their measure of education, besides endangering the health of the school by reason of their susceptibility to infectious disease."

McCULLOUGH, Piercy B. The Southwark school dental dispensary. Teacher, 16: 133–35, May 1912. illus.

Opened, January 22, 1912, a "municipally operated dental dispensary" in the school. The volunteer organization of dentists, rendering service for 15 months at the city hall (opened, Oct. 5, 1910) were succeeded on January 1, 1912, by a paid corps of eight legally qualified dentists, each serving one-half of every working day.

[Pittsburgh] Dental and oral hygiene in our public schools. Pittsburgh school bulletin, 3:24–25, May 1910.

Of the 732 children examined in two public schools, 9 mouths found in good condition; 2,909 diseased teeth; 3 children who used toothbrushes.

Reading. Board of education. Dental inspection. *In its* Annual report, 1910–1911. p. 11–12.

The Reading dental society, 1910, detailed 25 of its members for the inspection—8,925 pupils being examined. Less than 3 per cent were found to have perfect teeth, only 4,849 had ever used a toothbrush, but 1,369 had ever been to a dentist, and 1,094 had had permanent teeth extracted. Permanent teeth cavities to the number of 28,548 were found.

In 18 months the free clinic treated the teeth of 275 pupils.

The Reading free dental dispensary is the first reported in the State of Pennsylvania.

Work of the Reading dental society, operating successfully for three years, a free dental dispensary. Examination was made of the mouths of the first grade public school children, with results as follows:

Number examined	2,010
Green stain	1,436
Gums abnormal	93
Mouth breathers	140
Cavities in permanent teeth	2,907
Number of putrescent pulps	1,162
Number of exposed pulps	580
Use of toothbrush	796

(Tables with letter from Dr. H. W. Bohn, dated August 21, 1912, U. S. Bureau of education, Division of school hygiene and sanitation.)

SCHLEGEL, George S. The Reading free dental dispensary. Psychological clinic, 3: 249–54, February 15, 1910.

Organized by the Reading dental society, the first man reporting for duty on June 2, 1909. In less than five months, with two of unavoidable delay, the Free dental dispensary was founded, equipped and paid for. Equipment is modern in every particular. The patients are received through the Associated charities, from the public schools, and the general public, the teachers being provided with blanks to be filled out by them for school children. Hours, 9 to 12; 2 to 5; Saturday afternoons excepted.

Dental inspection to begin in the public schools with the September session, 1910.

PHILIPPINE ISLANDS.

OTTÓFY, Louis. Dental clinics in Manila: Schools, prison hospital, and orphanage. Dental cosmos, 52: 887–93, August 1910. tables.

Bibliography: p. 893 (of author's own papers and reports)

First free dental clinic in Manila, January 1904 (Report in Fourth international dental congress. Transactions, 1904) maintained in connection with St. Luke's hospital.

The school clinic, begun January 10, 1910, "is conducted absolutely without cost to the pupils and the school authorities. . . . The work is commenced at half-past seven or eight in the morning, when

I enter a schoolroom and ask the teacher to request all the children who have the toothache to rise. . . . These go to the operating room and are attended to. . . .

"The reports of the work as it progresses are daily brought to me by the assistant, who occupies a vacant room in the school building, and who operates from 7.30 until 12, and sometimes until 1 o'clock.

"All these clinics, except the one in the schools—and that lives by reason of the others—are connected in violation of law, but . . . under a provisional sanction. . . . I have made repeated efforts since 1903 to have the law amended so that (at first) such clinics might be established, and (since 1905) when they were established, that they might continue—but without success. . . . The donations to the clinic are valued at about $900. . . . My own services are given without remuneration. . . . The hospital gives quarters to the clinic free of rent."

See also Dental cosmos, October 1911 and November 1912.

Philippine general hospital is establishing a dental clinic to be in charge of author.

RHODE ISLAND.

COLTON, James C. The dental condition of children in the Providence public schools. Dental cosmos, 51: 876–80, July 1909.

"Of 1203 children examined, 1161, or 96.6 per cent had decayed teeth and 557 or 46.3 per cent had suffered from aching teeth within two weeks. . . . In the technical high school, where 100 young men were examined, 96 were found to have decayed teeth. . . . Of the 1203 examined, only 19.2 per cent used a toothbrush at least once a day; 37.7 per cent used a brush not less than once a week but not as often as once a day, and 43.1 per cent never used a toothbrush.

"Believing that nervous diseases and lowered vitality (due to abnormal oral conditions) contribute to a low standard of scholarship, I visited the ungraded rooms at the Benefit Street and the Chalkstone Avenue primary schools and there examined 39. . . . I found that every child had decayed teeth ranging in number from one to ten; 23 had aching teeth; 19 had been disturbed while sleeping by aching teeth within two weeks, and 14 could not eat without pain from carious teeth.

"I believe . . . there are over 27,000 public school children [in Providence] in need of immediate attention, and if 46.3 per cent of the public school children are suffering from toothache, there are 13,000 whose nerve condition is abnormal and who cannot reasonably be expected to attain a satisfactory standard of scholarship."

Providence. School committee. [Report of the Dental inspector] *In its* [Proceedings] no. 40 [Series E] February 23, 1912. p. 434–35.

The first year's work, ending January 26.

An examination of 4,418 children, "of whom 4,131, or 93 per cent, were found to have decayed teeth; 289, or 6.5 per cent, had sound teeth; 1,083, or 24.5 per cent, were found with aching teeth. Only 189 children out of 4,418, or 4.3 per cent, had received dental treatment previous to the examination. As a result of the examination and recommendation to the parents, 1,009 children, or nearly 24.4 per cent of all those whose teeth needed attention, have received 3,430 dental treatments—an average of over three treatments to each child."

THE SCHOOL NURSE.

GENERAL REFERENCES.

ALLPORT, Frank. The school nurse. American academy of medicine. Bulletin, 13: 145–50, June 1912.

"It is, of course, desirable that each nurse shall have but few schools to care for, in order that individual necessities shall be relieved in the best manner possible. No nurse should have under her care more than 1,000 pupils, indeed, one nurse can hardly care for more than one school and do her work satisfactorily, and I greatly question whether even this is not too much labor to expect of any one woman.

"This opinion can perhaps be better understood, if an effort is made to acquire some i lea of the multitudinous duties of the average school nurse. In the first place she shall act as first assistant to the medical inspector, and shall always be in attendance when he makes his visits to the school. By observation and consultation with the teachers, she finds sick and ailing children and submits them to the inspector. The carrying out of the inspector's orders is placed in her hands, whether this is done at the school, home, or hospital. Many cases of skin diseases, lice, filthiness, etc., are cared for at the school by the school nurse, under orders from the medical inspector, and in schools possessing bath tanks, etc., they are operated under the supervision of the school nurse. One of the principal functions of the school nurse is to see that the doctor's orders are carried out. The doctor may diagnose and prescribe, but unless his advice is followed his work is useless. This important duty is performed by the school nurse. It must be remembered that many public school children are poor children, whose parents are either busy, negligent, impoverished, dissipated or ignorant. They probably have no money with which to purchase medicines, appliances, glasses, medical, surgical and hospital services, etc., and all these things the school

nurse undertakes to supply by drawing upon the resources of charitable funds, charitable people, charitable hospitals and charitable doctors. These poor people are sometimes apparently devoid of energy, and have to be cared for with but little confidence in their intelligence. The school nurse then has to secure the medicine and see that it is properly administered. Cleanliness, bathing, properly prepared food, sanitation, ventilation, plumbing and warmth come under her supervision. She takes children to doctor's offices, dispensaries, hospitals, etc., and sees that they get home again. She carries out the doctor's orders at home, such as giving medicines, syringing ears, using eye-drops, making surgical dressings, etc., she cooperates and works with the truant officer in keeping children in school. In short, through her assistance the doctor is able to prescribe or operate with the confident feeling that . . . his directions will be followed as far as is humanly possible by the already over-worked school nurse, in cooperation with her equally praiseworthy but overburdened sister, the visiting nurse of the district. Before these commendable institutions came into existence thousands of able operations were virtually thrown to the winds by poor post-operative attendance, and enormous stores of good medical advice nullified by neglect and improper living. The school and visiting nurse have become, then, the element which has transformed doubtful results into reasonably certain good results.

"The school nurse not only comes into contact with the school child, but also naturally and inevitably mingles with the school child's family, and here she performs a most important function, not only to the child, but to the family and to the community as well. By calling upon the family to look after the welfare of the school child, she and the district visiting nurse, if necessary, will endeavor to educate the family to ideas of cleanliness, honesty, sobriety, industry, kindness, cooking, ventilation, infant welfare, etc., in all of which departments of proper living there is abundant opportunity for missionary work among the thickly populated tenement districts of our large cities. This is a department of charity which, unfortunately, will never be overdone, and the extent of its usefulness is only outlined by the amount of money that is eligible for the purpose. I believe there is no charity which furnishes such extensive results for the money subscribed as the visiting and school nurse, and no object for which people may so safely and blindly contribute financial support as the one under consideration; every dollar given helps to make individuals and communities better, healthier and happier."

CARLEY, Margaret E. The school nurse as a link in the chain of preventive medicine. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 33–40. table. insert.

Contains an outline of a plan for the development of school nurses' work, prepared by the writer, Dr. Carley, Department of hygiene, Boston public schools.

CORNELL, Walter Stewart. The nurse as a municipal officer. Psychological clinic, 4: 181–88, December 15, 1910.

Reprinted with some omissions and some new paragraphs and nurses' records *in his* Health and medical inspection of school children . . . 1912. p. 82–87. *Title:* The school nurse.

Article is chiefly the work accomplished in Philadelphia.

"There is no question as to the value and propriety of the nurse's services in treating minor skin diseases of a contagious character. . . .

"It is a fact, however, that the major portion of the nurse's work in the school building has come to be the treatment of minor cuts, bruises, and infections. . . . This relief so freely and so gracefully given is in reality dispensary work. . . .

"The chief business of the nurse is (*a*) to shorten or obviate the period of exclusion from school of children suffering from minor contagious diseases, and (*b*) to secure the correction of physical defects by reason of personal interview with the parents. . . . A certain proportion of the nurse's work as at present carried on is unnecessary and, therefore, an extravagance. Thousands of bruises and scratches are 'treated' which are so trifling and superficial that the act is a travesty on medicine. . . .

"Similarly, the 'treatment' of pediculosis, recorded as almost a third of the nurse's work, is seldom actual treatment at all. It is simply advice. Probably not 1 case in 20 requires a home visit and not 1 case in 50 an actual head scrubbing."

Doctor Cornell says further:

"The results of the school nurse's work are remarkable. Contrasting the work of the medical inspector working without a nurse with that of an inspector working with a nurse, the economy . . . in employing the nurse is easily manifest."

See regarding New York City, p. 76, of the book.

"There are 261 nurses employed in the division of child hygiene of the department of health, [New York City] and there are 55 additional nurses employed for five months during the summer, working from the 1st of May until the 1st of October.

"There are, however, a number of nurses employed in the division of communicable diseases and the division of contagious diseases of this department." (Excerpt from letter, dated Aug. 19, 1912, signed by John J. Cronin, M. D., assistant and acting director of child hygiene, to U. S. Bureau of education. Division of school hygiene)

STEWART, Isabel M. *and* **NUTTING, M. Adelaide.** The educational value of the nurse in the public school. *In* National society for the study of education. Ninth yearbook. Chicago, Illinois, The University of Chicago press [°1911] Part 2: 14–60.

Bibliography: p. 72–76.

"There is increasing accumulation of school functions relating to health. These may be cited briefly:

"(*a*) Sanitary inspection of school buildings, systems of ventilation, etc., with special attention to the daily cleaning and the disinfection of schoolrooms and lavatories.

"(*b*) Medical inspection for detection of contagious diseases and physical defects.

"(*c*) Personal health examination.

"(*d*) Hygiene of instruction.

"(*e*) Emergency service and treatment of minor chronic complaints.

"(*f*) Instruction of children in personal, home, and community hygiene and sanitation, and the practical application of the laws of health.

"(*g*) Instruction of, and cooperation with, parents.

"(*h*) Physical education."

Historical sketch of school nursing in New York City, and elsewhere, following the London work. In 1903, New York, $30,000 appropriation was made to extend the school nurse service and put it on a definite basis. This provided a staff of 27 nurses at $900 per year. These nurses attended 125 local and 4 parochial schools; since then, the staff has been increased to 141 nurses, including supervisors, all giving their entire time to the work.

Los Angeles was the second city to adopt the system; the work begun by the Visiting nurse society and taken over by the city, 3 nurses being appointed for 80 schools; begun in San Francisco in 1904 by the nurses' settlement, in 1908 was established with staff of 5 nurses. In 1908, Philadelphia Board of Education appointed 6 nurses.

The functions of the school nurse are as follows:

"(*a*) Assistant to the school doctor in his visits of inspection—preparing children for examination, recording data, testing vision, hearing, etc.

"(*b*) Routine daily, weekly, or monthly inspection in classrooms.

"(*c*) Keeping of records, sending out reports to parents, cards to principals, etc.

"(*d*) Treatment of routine cases in the school—bathing eyes, irrigating ears, dressing wounds, etc.

"(*e*) Emergency service—caring for accidents, fainting, convulsions, etc.

"(*f*) Instruction of children in personal hygiene and sanitation—practical demonstrations and talks.

"(*g*) Follow-up work in the homes—notifying physicians, instruction of mothers in the care of children, taking children to dispensaries, dental clinics, etc., for treatment, when necessary.

"(*h*) Sanitary inspection of homes—discovering and reporting contagious diseases to board of health.

"(*i*) Reporting of truancy cases.

"(*j*) Teachers' and mothers' meetings.

"(*k*) Summer work in prevention of infant mortality—playground supervision, fresh-air excursions, etc.

"In no one system are all these functions incorporated. . . . The staff of nurses is usually so entirely inadequate that only the most needy and pressing cases can be attended to. . . .

"The need now is for an institution or organization that will give the preparation required. . . . The one significant attempt to meet this problem is that undertaken by Teachers college at Columbia university, . . . a one-year course under the control of the department of nursing and health. . . . Its distinct aim is to prepare 'teacher nurses.' . . . A high-school certificate, or its equivalent, and a diploma from a recognized training school for nurses are required for entrance."

WATERS, Yssabella. Municipalities employing public school nurses. *In her* Visiting nursing in the United States . . . New York, Charities publication committee, 1909. p. 367 (Table V)

Municipalities employing public school nurses.

	Established.	Number of nurses.
California:		
Berkeley board of education	1909	1
Los Angeles board of health	1903	4
San Francisco department of health	1908	4
Colorado, Pueblo department of education	1909	1
Georgia, Atlanta department of education	1909	1
Illinois, Chicago department of health	1908	41
Iowa, Des Moines board of education	1905	2
Maryland, Baltimore department of health	1905	5
Massachusetts:		
Boston department of education	1905	34
Brookline department of education	1909	1
Cambridge department of health	1907	1
Michigan:		
Detroit board of health	1906	2
Grand Rapids board of education	1905	3
New Jersey:		
Jersey City board of health	1907	2
Orange board of education	1906	2
New York:		
New York department of health	1902	141
Syracuse board of health	1908	2
Ohio:		
Cincinnati board of health	1909	2
Cleveland board of education	1908	2
Oregon, Portland, city of Portland	1908	1
Pennsylvania:		
Harrisburg board of education	1908	1
Philadelphia board of education	1908	6
Washington:		
Seattle board of education	1908	2
Tacoma board of education	1908	1

WOOD, Thomas Denison *and others.* The nurse in education. Chicago, Ill., University of Chicago press [1911] 76 p. 8°. (National society for the study of education. Ninth yearbook. Part 2)

Bibliography: p. 72–76.

See also The educational value of the nurse in the public school, p. 14–60 (Stewart, Isabel M. *and* Nutting, M. Adelaide) The professional training of children's nurses, p. 61–71 (Read, Mary L.)

IN REPRESENTATIVE CITIES.

BROOKLINE, MASS.

LEWIS, Ida M. [The school nurse system of Brookline, Mass.] *In* Brookline, Mass. School committee. Report for the year ending December 31, 1910. p. 34–36.

A plan for the daily visiting of schools, homes, or dispensaries, establishing the school-nursing system, begun January 4, 1909. Number of eye glasses procured, 49; operations for adenoids and enlarged tonsils, 48; other operations, 5; cases treated at dental infirmaries, 297; number of dressings for relief of impetigo, discharging glands, and wounds, 285.

CHICAGO, ILL.

Chicago. Department of health. Rules and instructions for school nurses.

"1. The hours for work for nurses are from 8.30 a. m. to 5 p. m. with time off for luncheon.

"2. Nurses will visit schools and make routine inspections of hair, eyes, skin, and throats of pupils, and find out from the school inspector's record cards the names and addresses of pupils excluded on account of some contagious disease and those found defective who have been advised to seek treatment.

"3. The nurse will refer all cases except pediculosis to the school medical inspector for diagnosis and disposal. A list is to be left for the medical inspector each day.

"4. A failure on the part of the medical inspector to make a diagnosis on his next visit should be reported to the health department.

"5. Treat no case until diagnosis is made.

"6. Emergency treatment as for cuts burns, or skin wounds may be treated once by the nurse if necessary, and the parents then advised to continue treatment, or have the child placed in care of a doctor.

"7. Children with marked physical defects, such as those requiring glasses, or suffering from enlarged tonsils, adenoids, or nervous diseases, who have been advised by the medical inspector to seek medical advice, will be visited by the nurse at their homes, and in case treatment has not been begun will advise medical attention. Treatment for favus, scabies, and pediculosis can be advised or administered by the nurse at the home.

"8. Where operation or treatment is indicated and the family not able to pay for treatment, the child's father or mother should go to a free dispensary or hospital with the child. If not possible for them to do so, the nurse can accompany the child if the parents give a written request that she may do so. Nurses may visit homes of those reported absent from school on account of sickness, but must not enter the home if a contagious disease is found."

Instructions for treating minor contagious diseases follow—"provided the parents are not able to employ a doctor or fail to place the child under treatment."

WOODRUFF, Thomas A. The value of the nurse in the public schools. American academy of medicine. Bulletin, 10: 527–33, October, 1909, tables.

Also in American school board journal, 41: 4, 22, November 1910.

In Chicago, where the history of school nursing dates back some eight years, before school nursing was thought of elsewhere in the United States, a small group of workers from the Visiting nurses association were delegated by request of the city school to four special schools. The work grew so rapidly that in the spring of 1908, the nurses found themselves with more than 75 schools on their regular visiting list.

In October, 1908, when the health department of Chicago decided to put on school nurses, the Visiting nurses' association proffered its services. It donated ten of its best nurses to supervise and direct the ten school districts into which the city is divided. It was able to furnish in 48 hours 30 nurses.

The school nurses are under the joint supervision of the department of health and the Visiting nurses' association. They are paid by the city. Each has charge of a certain number of schools. She visits these schools each day.

A summary of the benefits derived from work of the school nurse shows:

"1. A decrease in the spread of contagion by a close observation of the children . . . and the supervision of all excluded cases in their homes. 2. They teach the parents, family, and children cleanliness and personal hygiene. 3. They instruct the mother in the care of her children and impress upon her the benefits to be derived from cleanliness, fresh air, and right living. 4. They render more effective the efforts of the medical inspector by visiting the homes of the children and reporting back information of the conditions found there. 5. They frequently find cases of deprivation and disease in the home which would otherwise go undiscovered, and the work of the medical inspector would be of little advantage in the school. 6. They make it possible to treat cases of minor ailments in school."

DETROIT, MICH.

KIEFER, Guy L. The school nurse as an aid to medical inspection of schools. American journal of public hygiene, 20: 279–81, June 1910.

The school-nurse work in Detroit. Two nurses granted in 1909, one added in 1910; each attends four schools daily. During the past year the two nurses made 1,169 visits to the schools and 2,723 home visits. Gave personal attention and such treatment as was possible at the school clinic in 4,651 different instances, and took 158 children to free clinics for treatment. Of the 461 cases of physical defects 289, or a little over 60 per cent, were corrected. Of these 461 cases, 152 had defective eyesight. Of the cases of physical defects not followed up by the nurses, only about 20 per cent received attention.

PHILADELPHIA, PA.

NEWMAYER, S. W. Evidence that the school nurse pays. *In* American school hygiene association. Proceedings, 1911. Springfield, Mass. American physical education review, 1911, p. 44–51, tables.

Also in New York medical journal, 93: 718–21, April 15, 1911. Reprinted.

Report of the work of the school nurses of Philadelphia for the year ending December 31, 1910.

CITY OF PHILADELPHIA.

Results obtained by a medical inspector when not aided by a nurse.

[Number of individual children reported upon, 751.]

Cases needing treatment reported upon as terminated.		Results reported.				
		Action.			No action.	
Kind.	Number.	Number.	Percentage.		Number.	Percentage.
Defective vision	272	70	25.8		202	74.8
Hypertrophied tonsils	338	62	18.4		276	81.6
Adenoids	36	5	13.9		31	86.1
Defective teeth	152	31	20.4		121	79.6
Total	798	168	21.1		630	78.9

Results obtained during the same period by the same medical inspector when aided by a school nurse.

[Number of individual children reported upon, 704.]

Cases needing treatment reported upon as terminated.		Results reported.				
		Action.			No action.	
Kind.	Number.	Number.	Percentage.		Number.	Percentage.
Defective vision	441	355	80.5		86	19.5
Hypertrophied tonsils	104	68	65.4		36	34.6
Adenoids	62	45	72.6		17	27.4
Defective teeth	150	138	92.0		12	8.0
Total	757	606	80.0		151	20.0

Results obtained by medical inspector aided by a nurse.

School.	Nurse.	Recommendations.			Per cent acted upon.
		Number.	Acted upon.	Not acted upon.	
1	Nurse	324	262	62	80.86
2	do	445	434	68	97.53
3	do	320	282	38	88.12
4	do	265	226	39	85.28
	Total	1,354	1,204	150	88.9

Results obtained by medical inspector not aided by a nurse.

School.	Nurse.	Recommendations.			Per cent acted upon.
		Number.	Acted upon.	Not acted upon.	
5	None	283	83	200	29.32
6	do	582	152	430	26.12
7	do	441	94	347	21.31
8	do	474	91	383	19.2
	Total	1,780	420	1,360	23.6

Schools	39
Nurses	9
Old cases	42,869
New cases	16,341
Cases cured	10,969
Visits to schools	5,108
Visits to home (old)	3,096
Visits to home (new)	1,928
Total number of visits to homes	5,024
Visits to dispensary (old)	3,139
Visits to dispensary (new)	2,007
Total visits to dispensary	5,146
School consultations (parents)	754
School consultations (pupils)	2,687
Total school consultations	3,441
Examinations for uncleanliness	30,099
Examinations for bureau of municipal research	737

NEWMAYER, S. W. A practical system of medical inspection with trained nurses, adapted for public schools of large cities. New York medical journal, 87: 637–39, April 4, 1908. forms.

Reprinted.

Discusses the medical inspection system devised by Dr. Newmayer for use in Philadelphia schools. The chief factors considered were:

"1. The elimination of useless clerical work.

"2. Methods which would secure cooperation between medical inspector, nurse, principal and teacher, and parents.

"3. The unnecessary exclusion of pupils, and, when excluded, their return in the shortest possible time.

"4. Each party concerned assumes his or her share of the responsibilities, and errors can easily be traced to their source.

"5. Records and reports are few and can readily be referred to for practical purposes."

Philadelphia. Superintendent of public schools. School nurses. *In his* Annual report, year ending December 31, 1910. p. 44–45. table.

"The nurse teaches both the pupils and the parents the value of practical hygiene and *accomplishes results.* She thus becomes . . . an invaluable adjunct to medical inspection."

Record of results in schools where nurses are employed as compared with schools without nurses. A comparative study by the Department of health and charities.

SCHOOLS HAVING NURSES.

Schools.	Recommendations.		Per cent acted upon.
	Number.	Acted upon.	
James Forten	324	262	80.9
Wharton	445	434	97.5
Catto	320	282	88.1
Wood	265	226	85.3
Total	1,354	1,204	88.9

SCHOOLS WITHOUT NURSES.

McDaniel	283	83	29.3
Lynd	582	152	26.1
Wyoming	441	94	21.3
Reynolds	474	91	19.2
Total	1,780	420	23.6

ST. LOUIS, MO.

St. Louis. Board of education. Department of school hygiene. *In its* Annual report, year ending June 30, 1911. p. 141–48.

At the beginning of the year, a corps of six nurses was added to the Department. Duties and lines along which their work was carried on:

"1. To assist inspector of hygiene in his examinations and to carry out his instructions.

"2. To keep records of children examined, making special notes as to what treatment has been obtained.

"3. To examine all absentees returning to school before they enter rooms, with a view of detecting evidence of infectious or contagious diseases, excluding or holding children in suitable quarters for further examination by inspector of hygiene.

"4. To visit homes of all excluded children or children whose parents do not respond to repeated notices from the inspector of hygiene of the existence of some physical defects, which materially impedes the child's progress in school.

"5. To interview and advise parents, getting information of the social and hygienic conditions of the home of pupils incorrigible or morally weak, suggesting proper clothing, food and cleanliness.

"6. Advising parents or guardians of the need of certain medical or surgical treatment, also advising them where the free medical and dental clinics are, also where the free childrens hospitals are located.

"7. When the time will permit, they can make eye and ear tests of children selected by the inspector of hygiene.

"8. To be responsible for the personal hygiene and cleanliness of all children under their care.

"9. To observe the matter of ventilation, light, heat, and proper seating of children, and bring to the attention of the principal and supervisor of hygiene.

"10. To assist in caring for children who are in need of emergency medical or surgical treatment while in school, having an emergency chest at her disposal.

"11. To assist principals, teachers and inspectors in determining the matter of unfitness or fatigue among the school children, especially in the matter of physical training.

"12. Their visits to the homes of excluded and sick, absent children will be the direct means of having them returned to school at the very earliest possible moment."

Nurse record blanks, p. 143–46. Other blanks, p. 147, 149.

Summary of district nurses' reports.

Visits to homes of pupils	1,560
Visits to hospitals	55
Visits to clinics	934
Operations secured through visits	253
Fitted with glasses through visits	191
Emergency attentions at school	1,003
Dental treatments	196

TRAINING OF MEDICAL INSPECTORS, SCHOOL NURSES, AND SCHOOL TEACHERS.

American academy of medicine. Report of Committee for teaching preventive medicine in universities and normal schools. *Its* Bulletin, 13: 20–22, February 1912.

Chairman, Henry B. Hemenway.

A preliminary report.

"Preventive medicine is not taught in a thorough manner by most medical schools. Very few hours are devoted to this branch in the advised curriculum. . . .

Secondly, there are few competent to take positions as professors of public health in universities. . . . At the University of Wisconsin, under . . . Prof. Ravenel, a course in public health has been inaugurated. Columbia and Cornell universities and the Massachusetts institute of technology are doing the same. Judging from results, the Massachusetts institute of technology is today giving better instruc-

tion in this line than any medical school in America." The Harris lecturer at the Northwestern university for 1912 will be Dr. Milton J. Rosenau.

Discussion: p. 22–26.

BURNETT, James. The teaching of school hygiene. Medical record, 79: 711–12, April 22, 1911.

Courses of instruction before a candidate for diploma in school hygiene is admitted to examination, in: "1. Practical instruction in children's diseases (three months). 2. Examination of the eye, ear, nose, and throat (three months). 3. School hygiene, as outlined above (six months), the course to include practical examination of school children under a specially recognized teacher."

The diploma would require but a year's additional special training. "If such a diploma were instituted, and satisfactory instruction given in school hygiene, the standard of the school physician would be raised."

DITMAN, Norman Edward. Education and its economic value in the field of preventive medicine. The need for a School of sanitary science and public health. Columbia university quarterly, 10, June 1908, supplement. 70 p. diagrs. map. tables. (Appendix I, II)

Bibliography: p. 69–70. Reprinted.

A school of preventive medicine should be planned to give instruction to the following groups: 1. Students preparing for the practice of medicine. 2. Students preparing for offices of health boards and sanitary inspectors. 3. Students preparing for sanitary engineering—civil, military and naval. 4. Students preparing for work as school and college teachers, school nurses and school inspectors. 5. Students preparing for work as officers of charity societies and institutions, visiting nurses and "social workers." 6. Students preparing for the ministry. 7. Students preparing for the work of legislators. 8. The public.

Subjects of instruction proposed for school nurses and school teachers.

Conditions concerned in the causation and occurrences of disease in individuals, groups of individuals, and communities.

+Modes of transmission, portals of infection, geographical and seasonal distribution of transmittable and epidemic diseases, and the approved methods of prevention of these and other diseases.

+Legal aspects of methods of isolation, quarantine, medical and sanitary inspection, compulsory vaccination and inoculation, school attendance, notification, and of methods for preventing the transmission of communicable and epidemic diseases.

+The liquor problem; insanity, pauperism and crime dependent on disease and intemperance.

+American social conditions (including immigration, the growth and concentration of population in cities, with the attendant dangers).

+Sanitary legislation and organization.

Principles of relief; organized charities.

Social and moral prophylaxis.

+Diseases of animals transmittable to man; relation of insects to disease.

+Hygiene of the child and the adult, the school and the tenement house, hygiene of ventilating, heating, atmospheric pollutions, and their influence on health and disease.

+Theory and practice of physical education.

+Correction of conditions which interfere with the physical welfare of school children.

+Social and vital statistics.

+Adulterated and unwholesome food; markets, bakeries, hotels, restaurants, infected food, ice, canned goods and water supplies.

+Dairy products; milk, etc.; inspection of herds and dairies; use of tuberculin test, pasteurization, milk analysis and laws.

*Dangerous occupations and preventable accidents.

+Excursions for sick children, fresh air funds, visiting nursing, etc.

+Sanitary museum exhibits (see Park's Museum catalogue).

Compiler's note: Cross mark (+) indicates subjects included in training of school inspectors; to which author adds: Medical and sanitary inspection.

Subjects marked with a star (*) may be omitted in training of school teachers; to which training the author adds:

Municipal, State, and National Government.

Municiapl sanitation: (1) Pollution of water and ice supplies, methods of purification and relation to health and disease. (2) Construction of reservoirs, filtration plants, sewage and water systems; methods of sewage and refuse disposal; street cleaning. (3) Public baths, parks, and comfort stations. (4) Public nuisances, offensive trades, smoke, stables, noises and filth.

FORCE, John Nivison. Standardization of the health and development requirement. California. State board of health. Monthly bulletin, 5: 190–91, February 1910.

Medical inspectors in California.

"At the last session of the legislature a bill was passed authorizing school boards 'to establish health and development supervision in the public schools of this State.' The law further provides that the examining staff for health and development supervision shall consist of persons holding a life diploma of the high school or grammar grade, and persons holding a certificate to practice medicine and surgery.

In addition persons so qualified must have a health and development certificate issued by county boards of education on presentation of a 'recommendation from the State board of education certifying special fitness for the work.' The law provides no standard of requirement by which the State board of education shall act in determining 'special fitness,' and the suggestion has been made that in choosing the medical members of the staff, the endorsement of the candidate by his county medical association be secured by the State board of education. This is a most excellent idea as an additional safeguard with regard to medical fitness, but takes no account of the 'special fitness' desirable in dealing with problems of the public health. . . . The following is an attempt to suggest a plan of procedure which will serve to standardize this requirement.

"Recommendations from the State board of education certifying special fitness for health and development supervision in the public schools of this State will be granted only to:

"(*a*) Persons certified by the University of California or other institution of like standing as having completed a course in hygiene covering the following subjects:

"1. *Sanitary engineering.* Elementary knowledge of the construction and sanitation of water supplies, the disposal of sewage and sewerage systems, and the disposal of refuse.

"2. *Sanitary architecture.* The plumbing, lighting, heating, and ventilation of buildings.

"3. *Food inspection.* The sanitation of the meat, milk, vegetable, and grocery supply and the detection of adulterants.

"4. *Personal hygiene.* The essentials of personal hygiene including anthropometry and the prescription of exercise.

"5. *Vital statistics.* The application of statistical methods to the conservation of the public health.

"6. *Epidemiology.* The hygiene of transmissible diseases.

"7. *Sanitary law.* The health laws of the State, the school laws of the State, and the Federal laws designed to conserve the public health.

"(*b*) Persons otherwise qualified, passing an examination in the above mentioned topics to be given by the State board of health.

"The examination mentioned in section (*b*) could be given either by the State board of education, by the State board of health, by the State board of medical examiners, or by the State board of examiners for registration of nurses appointed by the regents of the university."

HECHE, Arthur. A report on the teaching and practice of hygiene in the public normal schools of the United States. Journal of educational psychology, 2: 429–39, October 1911. tables.

Questionnaire sent to 191 of the 203 most important normal schools listed in v. 1 of the Bureau of education report for 1909, elicited returns from 84. "*Exactly one-half of the 84 heard from offer no hygiene courses aside from the hygiene given with physiology or incidentally in courses on school management, methods of classes, psychology, etc.*" Nine schools give neither physiology nor hygiene, and only one school attempts to train special teachers of hygiene.

HILL, David Spence. The cooperation of educational and of medical departments of American universities. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 136–51. tables.

Also in Science, n. s. 36: 647–59, November 15, 1912. *Title:* The need of practical cooperation of educational and of medical departments in modern universities.

Reprinted.

Questionnaire sent to medical colleges and departments embraces the following questions:

"I. (*a*) What courses intended specifically for teachers or prospective teachers are being offered by your medical department? (*b*) Duration of courses? (*c*) Number enrolled this year? (*d*) Any certificate or diploma awarded for completion of same by teachers or prospective teachers?

"II. (*a*) What courses in pedagogy are offered by your department of pedagogy or education for the benefit of physicians or medical students or nurses who are or intend to become inspectors of schools? (*b*) Duration of courses? (*c*) Number enrolled this year? (*d*) Any certificate or diploma awarded for completion of same by physicians, medical students or nurses?

"III. Please write any other relevant information or practical suggestion regarding possible need for cooperation between medical and pedagogical departments."

Of the 112 inquiries sent to the medical colleges, 69 responses were received; of the 160 sent to departments and schools of education, 105 responses were received.

Most of the responses from medical colleges indicate: "No work whatever for the benefit of prospective teachers"; from educational departments, "no work especially intended for medical inspectors, school nurses or school sanitarians"; from medical and from educational departments of certain universities, "no active affiliation reported." Scarcely half a dozen universities report a reasonably effective scheme for cooperation of medical and educational departments. The cooperation of trained workers in the medico-pedagogical field has gained headway against difficulties. . . .

"1. With reference to the need of the schools, provisions should be made for senior medical students, and especially for graduates, in the educational department for instruction and training in the essentials of pedagogy. . . . In basal study of psychology of common interest to teacher and physician, the

majority of medical students obtain no systematic training whatever . . . since, according to Flexner's report,[1] half or more of the medical schools require less than a good high school course for admission. . . .

"Medical students who undertake the work in pedagogy as prospective school inspectors or school physicians should undertake the extra training either in a graduate year or elect a minimum during the senior year of the medical course. . . .

"2. Appropriate courses in education should be offered prospective school nurses.

"3. The college student who desires to become a specialist in school hygiene or a public sanitarian may omit the regular medical course and proceed from the bachelor's degree to the doctor of philosophy in hygiene or to the new degree of doctor of public health . . . candidates for the bachelor of arts in education should be permitted to follow hygiene as a major subject, extending through at least three years. . . . In the courses in hygiene, preventive medicine, physiology and psychiatry, the medical department may be utilized. . . .

"4. In the study of the school problems of elimination, retardation, repeating, and of the exceptional child, the department of education should lead. The educational laboratory and pathological clinic, an adjunct to the laboratory of psychology, is one point for concentration of effort upon these problems, by cooperation of psychologist, physician, sociologist, and teacher."

KOBER, George M. Hygiene and dietetics. American academy of medicine. Bulletin, 11: 779–86, December 1910.

Outlines lectures for a course intended to give to students such knowledge "as may enable them to differentiate between wholesome articles of food and drink. . . . The examination of air in rooms, the velocity, condition and quality of air currents are considered. . . . The organic analyses of water and its various forms of pollution, together with the examination of soils."

Under "List of lectures" are: The alcohol and tobacco question. Importance of good teeth. House sanitation. Lighting. Hygiene of schools—Medical inspection of school children and the prevention of permanent disabilities in childhood. Social and moral prophylaxis.

LANKFORD, J. S. The public school and the prevention of tuberculosis. Texas State journal of medicine, 5: 403–405, March 1910.

Reprinted.

"A careful study of tuberculosis should be made a part of the curriculum of every school, beginning at the fourth grade and extending through the grammar school. . . .

"First. It is the duty of the officials to see that buildings are located on ample grounds and in airy places, so far as possible; that the premises are kept clean and sanitary; that the buildings are arranged to the best advantage for heating, lighting and ventilation, that extremes may be avoided; that seats are adjustable and that everything is done to protect children from disease and to promote good health and development. The course of study . . . should be . . . lightened; the mental strain should be relieved and more attention given to the physical side of life. . . .

"Second in importance is the health and preparation of the teacher. She must be free from tuberculosis . . . [and] must be deeply impressed that the prevention of tuberculosis stands first in any system of education. . . . She should have a keen insight into the general condition of her pupils, as well as a wide scope of information concerning illness. . . . She should urge that every practice promoting general health in school life is carried out.

"Third. Practical courses of instruction should follow this equipment."

PALMER, George Thomas. The short-comings of municipal public health administration. American city, 5: 64–68, August 1911.

"In but seven of the [44 Illinois] cities have the health officers been permitted to serve sufficiently long to become thoroughly conversant with the sanitary requirements of the city or to work out sanitary and public health reforms. In 15 cities changes have been made every two years, and in six . . . every year."

ROSENAU, Milton Joseph. The department of preventive medicine and hygiene and the new degree of doctor of public health. Boston medical and surgical journal, 166: 886–87, June 13, 1912.

Course authorized by the faculty of medicine on June 22, 1910, by Harvard university president and fellows, leading to the degree Dr. P. H.

"While candidates for the degree of doctor of public health are advised first to take the medical courses, the medical degree is not a prerequisite. Those who desire to specialize in sanitary engineering, sanitary architecture, sanitary chemistry, vital statistics or other branches of public health work may receive the degree after four years of work following the bachelor's degree. . . . In any case a minimum of one year of residence is required."

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[1] Flexner, Abraham. Medical education in the United States and Canada; a Report . . . New York City [• 1910] 346 p. maps. tables. 8°. (Carnegie foundation for the advancement of teaching. Bulletin, no. 4)

RUCKER, William Colby. The making of a health officer. California State journal of medicine, 9: 155–56, April 1911.

The course to be "offered by the Oakland (California) college of medicine will cover one year and . . . will include general and personal hygiene, sanitary engineering, especial stress being laid on the collection, storage, purification and delivery of water, and the collection, purification and disposal of sewage; theoretical plumbing; sanitary architecture; sanitary law, bacteriology, parasitology including medical entomology, sanitary chemistry and food inspection.

Discussion: p. 156–58.

SHIPLEY, Alfred E. Training for public health. New York medical journal, 93: 985–87, May 20, 1911.

"Training for public health service involves the preparation of physicians and of nurses. . . . Such a course should include:

"Hygiene studied from public, semipublic, and personal standpoints. Public hygiene includes municipal, State, and Federal hygiene. . . . State hygiene attends to the health affairs of towns and rural communities. . . . Municipal hygiene . . . will require the services of a vast number of medical men. . . . Consideration must be given to sewage, garbage, cleanliness of streets, water supply, food supply, sanitation of dwellings, including ventilation, lighting and plumbing, air pollution, transmissible diseases, and child hygiene.

"School hygiene is developing very rapidly, its phases already being so many that it should have the entire time service of medical men.

"In the proper consideration, therefore, of the many problems arising in the field of preventive medicine, social, industrial, economic, and medical factors must be given their due proportions."

SMALL, Willard S. School hygiene in the training of teachers: The organizing principle. *In* American school hygiene association. Proceedings, 1910. Springfield [Mass.] American physical education review, 1910. p. 124–31.

Also in American physical education review, 15: 586–92, November 1910; *and in* Atlantic educational journal, 6: 5–6, 40, September 1910.

"Health as an end in education requires that the various factors of the school life and environment shall be adequately understood. . . .

"The three factors I have chosen as illustrative examples, would be acknowledged . . . as of essential importance.

"1. *Ventilation.* The point of attack is the relation between air and life. This should be a matter of intimate knowledge on the part of teachers. As a matter of fact, this relation is little understood. . . .

"2. *Eye hygiene.* . . . The development of the eye must be understood. The specific strains and degenerations to which each important part is liable must be made clear. . . . The principles of lighting . . . the vicious effects of improper position; the dangers of too prolonged near work and of home study; improper methods in writing. . . . Above all, it is essential that there should be a thorough study of the hygiene of reading and definition of the hygienic requirements for text books. . . .

"3. *Physical defects.* . . . The statistics of retardation show relatively little retardation associated with visual defects, whereas the common defects . . . e. g., adenoids, enlarged tonsils, are attended by a relatively large amount of retardation. The same is true of defective hearing. . . . Such defects inevitably mean retardation and perversion of development in the ordinary school environment. . . . Teachers in training should study the more important physical defects—their physiological character, their specific effects upon psycho-physical development, their relations to school practices and conditions, and their remedies or alleviations."

STEWART, Elsa. Sex hygiene. 9 p. 8°. (Cheney, Washington. Department of school hygiene. Bulletin H., no. 1, Sept. 27, 1911)

The Washington State board of education passed resolution, in January 1911, making sex hygiene a part of the curriculum of the State normal schools.

The course was first given at the Cheney State normal, summer session 1911. Frequent bulletins are to be sent out, detailing the plan and progress of the work.

The course "is concerned first with the primary principles of biology, (*a*) protoplasm, (*b*) life, (*c*) the cell theory, (*d*) germ cells and their life cycle; 2d, the evolution of sex; 3d, human reproduction presenting the (*a*) anatomical and (*b*) physiological phases briefly, (*c*) embryological development touching upon prenatal influences, (*d*) birth; 4th, the phenomena of adolescence physical and psychical, the boy and girl problem and its solution, adolescent reading and amusements; 5th, the pathology of sex onanism among school children, causation and treatment, social diseases and the social evil. This phase of the subject will be treated briefly . . . 6th, sociological aspects of sex, (*a*) recognized social conventions, what they are for and their meaning, (*b*) the nature and obligations of the family and the sancity of the home, (*c*) the centripetal tendencies of family life against the centrifugal tendencies of industrial life, (*d*) studies of the theories of inheritance and environment, (*e*) eugenics, (*f*) infant mortality, causes and preventions, (*g*) race suicide and the duties of educators in the preservation of the race."

TERMAN, Lewis M. Professional training for child hygiene. Popular science monthly, 80: 289–97, March 1912.

"The situation may be summed up in a sentence: *The physician's training does not qualify him for the many sided task of adapting the program and environment of the school to the health and growth needs of the pupil.* The main purpose of this article is to suggest tentatively . . . some of the more important lines of professional preparation necessary for those who are to work in any field of child hygiene in the public schools.

"Educational hygiene has four chief aspects: (1) 'Medical Inspection,' including routine examinations for physical defects and consequent follow-up service; (2) supervision of physical training, including free play, gymnastics, and athletic sports; and (3) child psychology, including clinical work with mentally and morally atypical children, the hygiene of instruction, etc.; (4) researches in school heating, lighting, ventilation, seating, sanitation and other externals affecting the health of the child. Each of these divisions has of course its logical subdivisions but as only the very largest cities could employ a more specialized staff than this scheme calls for it is unnecessary to carry the classification further. On the other hand, the majority of school health officers will probably for some years to come have to serve more or less in all these capacities. Assuming, however, the four separate lines of specialization above designated let us examine the general and special courses of study which would be necessary for their successful pursuit.

"To begin with, it would seem that the time requirement could not reasonably be placed below seven years in addition to a four year high school course. This corresponds to the usual allotment for the doctorate of philosophy and to that for the doctorate of medicine in our sixteen best medical schools. Using the seven-year basis for our calculation, the course falls naturally into three divisions. The first three years would be given to regular college work in which the elements of physics, chemistry, biology, physiology, psychology, paidology, sociology and at least one modern language would be taught. The next three years would be ample time in which to give all that is needful *for the school health officer* out of the present medical curriculum, besides leaving a fair margin for collateral work in psychology, paidology, and the technical aspects of education. The last year would be reserved for carefully supervised clinical practise in the public schools. Proof of ability to read both French and German should be required a year before the end of the course, for most of the important researches in school hygiene are in these languages.

"Physicians will of course object to the time allotment for the second division. How, they will ask, can you condense a medical course into three years, to say nothing of a margin to be left for psychology and paidology? The answer is more in terms of elimination than of condensation. Pharmacology, materia medica and therapeutics can be discarded in a lump, with a consequent saving of a full half year. Doing the same for the obstetrics, gynecology and most of the surgery effects a further saving of three-quarters of a year. This makes a year and a quarter off the present medical course. Further, for the purpose here in question, minor savings could be effected in several subjects, as, for example, anatomy, in which the minimum of 400 hours required by the best medical schools could here be taken for the maximum. Finally, the additional year of clinical experience in the schools would take the place of most of the usual courses in the hospital and dispensary, so that almost half of the second three years would be left for psychology, paidology, education, sociology, school hygiene, gymnastic sports, etc., the amount of each being dependent upon the student's choice among the four special lines above named: medical inspection, clinical child psychology, physical training and school sanitation. Throughout the course time would be saved and effectiveness promoted by never losing sight of the professional nature of the courses. Physiology, pathology and bacteriology, as well as psychology and sociology, would have to be taught in their relations to the ultimate work to be done, not as so many unitary and complete sciences. Even the first three years ought to be conscious of the professional end.

"A school health officer, the product of such a school, would be of far greater service to education than is the usual school physician and would probably be worth more to society in the long run than a dozen well-trained practitioners. At least one such specialist in child hygiene is needed for every 2,000 school children. California needs 200, the United States at least 7,000. What university will be the first to undertake their production?"

WHIPPLE, Guy Montrose. The instruction of teachers in school hygiene. Pedagogical seminary, 17: 44–50, March 1910.

Status of the teaching of school hygiene to teachers: Course outlines; time needed.

WINSLOW, Charles Edward Amory. The rôle of the visiting nurse in the campaign for public health. American journal of nursing, 11: 909–20, August 1911.

Establishment and value of school-nurse work; and the service in homes, teaching "public health."

"Most hospital training schools are not prepared to meet these new needs. . . . It is absurd to attempt to train the nurses . . . for the public health campaign by a course which involves two or three hours a week of theory and 50 or 60 hours in the wards, not hours of clinical instruction, but for the most part a routine of unenlightening and exhausting manual work. . . .

"The instructive visiting nurse in the public health campaign . . . must have a sound grasp of the biological principles which underlie her work so that she ought to have as good a grounding as the medical man in the fundamentals of physiology and bacteriology and hygiene; and . . . she must be ac-

quainted with the broad outlines of sanitation and sociology. . . . We may emphasize as necessary the provision of special graduate instruction for nurses specializing in these various lines."

WITMER, Lightner. Clinical psychology and the professional training of teachers (and others interested in child welfare) *In his* The special class for backward children. . . Philadelphia, The Psychological clinic press, 1911. p. 262–75.

See also under The teaching of health and hygiene. Meylan, George L. Report of the committee, 1910.

SALARIES OF SCHOOL MEDICAL INSPECTORS.

AYRES, Leonard P. Salaries of medical inspectors in America and in England. Journal of education, 70: 149–50, August 19, 1909.

[GULICK, Luther Halsey] Salaries of medical inspectors. Pedagogical seminary, 19: 225–27, June 1912. chart v.

No salary, 75; $1 to $100, 47; $101 to $200, 50; $201 to $300, 44; $301 to $400, 25; $401 to $500, 24; $501 to $600, 18; $601 to $700, 2; $701 to $800, 12; $801 to $900, 6; $901 to $1,000, 13; $1,001 to $1,500, 18; $1,501 to $2,500, 7; $3,501 to $4,000, 3. Fee according to service, 19. *From article by* Louis B. Blan.

GULICK, Luther Halsey *and* **AYERS, Leonard P.** Salaries of medical inspectors and the number of pupils per inspector. *In their* Medical inspection of schools. New York, Charities publication committee, 1908. p. 1, 23, 139–49. table.

Statistical.

Facts in regard to medical inspection in seventeen cities.

	Average attendance.	Medical inspectors.	Children per inspector.	Salaries of inspectors.	Total of salaries.	Per capita cost for salaries only.
Boston, Mass	86,839	80	1,085	$200	$16,000	$0.184
Brockton, Mass	7,781	7	1,111	200	1,400	.179
Camden, N. J	9,718	1	9,718	2,400	2,400	.247
Chelsea, Mass	6,047	3	2,015	200	600	.099
Detroit, Mich	37,757	27	1,398	250	6,750	.178
Lawrence, Mass	7,539	1	7,447	1,500	1,500	.201
Montclair, N. J	2,503	4	625	305	1,220	.487
Newark, N. J	38,562	16	2,410	400	6,400	.165
New Haven, Conn	18,135	5	3,627	240	1,200	.066
New York, N. Y	523,084	166	3,151	1,200	199,200	.380
Paterson, N. J	15,238	3	5,168	[1] 1,500 [2] 1,200	3,900	.251
Seattle, Wash	16,174	11	1,470	[1] 1,200 [3] 600	7,200	.445
Somerville, Mass	11,166	7	1,581	200	1,400	.126
Springfield, Mass	10,605	11	964	250	2,750	.259
Woonsocket, R. I	2,862	6	477	50	300	.104
Worcester, Mass	18,273	15	1,218	200	3,000	.164

[1] One. [2] Two. [3] Ten.

TERMAN, Lewis M. [Salaries of California school physicians] Psychological clinic, 5: 58, May 15, 1911.

Pay of school health officer varies from $100 to $3,600 per year. Half-time workers (excluding nurses) receive from $400 to $1,600, full-time workers from $1,500 to $3,600. Two of the smaller cities pay the physician for each individual pupil, 50 cents in one case, $1 in the other.

MEDICAL INSPECTION IN INDIVIDUAL LOCALITIES AND INSTITUTIONS.

ALABAMA.

Birmingham public schools. [Superintendent] Report of Medical director. *In his* Annual report, 1911. p. 27–37. illus.

Signed: James S. McLester, M. D.

Each teacher keeps upon her desk blank cards (fig. 1) upon which she notes anything unusual she detects in a child; when these cards are filled, she gives them to the principal who keeps them until the next visit of the medical director, who in a room set apart for the purpose, examines all those pupils

whose record cards have been given him. Communication with attached return postal is sent the parent explaining case and advising that physician be consulted, or the child taken for free treatment to the dispensary at the Hillman hospital; parent is requested to take this notification to the physician or hospital as case may be, and a reply from the physician is to be written upon the return postal card. This reply is noted on the child's original card, which is then filed in an index system. In cases where no physician's reply is received, the nurse visits the child's home, and her data are added on the record card, before its final filing.

Study of 10 elementary white schools (enrollment of 5,343) was begun in March 1911. Results—I. Temporarily subnormal, 192. II. Permanently subnormal: (1) Morons, 33; (2) imbeciles, 10; (3) idiots, 4. III. Truant and incorrigible class: (1) Defective mentality, 16; (2) fair mentality, 51. IV. Epileptic class, 4. V. Physically defective: (1) Physical trouble, temporary or permanent, 347; (2) the blind, 3; (3) the deaf-mute, 0.

In the Paul Hayne school a dental clinic cares for the defective teeth. Central high school has an emergency hospital (see picture. p. 28).

Samples of cards used by the department of medical inspection, p. 35–36.

ARIZONA.

[LOPER, John D.] Medical inspection of school children. Made by competent physician, employed by the board of education.

Letter, signed John D. Loper, superintendent, to U. S. Bureau of education, Division of school hygiene.

If child is found to have any infectious or contagious disease, he is sent home with a notice to parent stating the case and asking that he be given treatment by physician of their own choice; readmitted to school only upon certificate of school physician. "About 8 per cent of our pupils have trachoma. Eighty per cent of the children so affected are among our Mexican population and fully 90 per cent of these children have no means of securing treatment. Hence, our greatest problem in this connection is to provide some means by which our indigent children may be treated for this disease."

CALIFORNIA.

California. University. Statistics of the infirmary. Medical examination of new students, 1908–9, 1909–10. *In* Biennial report of the President, 1908–1910. Berkeley, The University press, 1910. p. 329–61 (tables only)

	In 1908–9, men examined, 607; women, 375.		In 1909–10, men examined, 791; women, 468.	
	Men.	Women.	Men.	Women.
Chest deformity	145	91	80	138
Ears, defective	33	13	.....	.....
Eyes, defective	126	115	.....	.....
Feet, weak arches	173	246	193	218
Heart, abnormal	79	22	58	8
Hernia	35	1	23	.....
Lungs, abnormal	11	5	3	10
Nose, diseased	54	54	96	13
Shoulders:				
Right lower	308	143	185	111
Left lower	25	96	26	34
Stooped	52	94	67	118
Skin, diseased	178	47	218	27
Spine:				
Antero-posterior curve	102	79	71	14
Lateral curve	46	98	52	113
Teeth, poor	115	17	227	150
Throat, diseased	106	48	180	179
Thyroid, enlarged	2	57	7	56
Varicocele	91	.....	138	.....
General condition:				
Excellent	39	25	26	21
Good	324	156	243	171
Average	169	83	419	181
Fair	61	45	85	78
Poor	4	66	18	17

Days lost in excuses issued on account of illness.

	1908–9 (Aug.–May).		1909–10 (Aug.–May).	
	Men.	Women.	Men.	Women.
Total	6,530	3,012	7,326	4,046
Excuses	2,328	.....	2,817	1,568
Counted more than once	680	323	908	547
Individuals receiving excuses	838	503	977	609

LESLIE, George L. Health and development supervision of the public schools of California. Western journal of education, 15:17–25, January 1910.

Assembly bill No. 303, p. 25–26.

Also in Sierra educational news, 6:27–34, February 1910; and with some verbal changes, *in* Psychological clinic, 4:33–39, April 15, 1910.

TERMAN, Lewis M. Medical inspection of schools in California. Psychological clinic, 5:57–62, May 15, 1911.

Legislature, March 1909, "passed bill authorizing (not compelling) cities to make expenditures for carrying out an elaborate system of health supervision in the schools."

BERKELEY.

HOAG, Ernest Bryant. The cooperation of school health departments with other health agencies. California State journal of medicine, 9:18–19, January 1911.

Also in American academy of medicine. Bulletin, 12:36–39, February 1911.

The medical clinic organized in Berkeley after the San Francisco fire of 1906, was reorganized with staff of 15 representative physicians. The Berkeley charity organization joined with the medical clinic, and the two associations housed in a building near the school and city health department. The Alameda county dental society organized two dental dispensaries, one for Oakland and one for Berkeley, completely equipped in modern dental necessities. The board of education at once placed at the disposal of the Berkeley dental dispensary, offices in connection with those of the medical director of schools. The Red Cross and Tuberculosis societies will also cooperate with the others, and Berkeley will have united toward one common end the efforts of the following health agencies: (1) The school health department; (2) the city health department; (3) the charity organization; (4) the medical dispensary; (5) the dental dispensary; (6) the city charity commission; (7) the Red Cross society; (8) the tuberculosis society.

HOAG, Ernest Bryant. A general plan for health supervision in schools. California. State board of health. Monthly bulletin, 5: 173–78, February 1910.

Of the first 750 children referred to the school physician by the teachers in Berkeley, Cal., nearly 70 per cent were found to be in need of medical or dental attention. Of 493 children in the third to the eighth grades inclusive, 53 per cent used tea or coffee or both daily. Of the 493 children, 25 per cent habitually slept in unventilated bedrooms.

LOS ANGELES.

LESLIE, George L. Department of health and development—Los Angeles city schools. California. State board of health. Monthly bulletin, 5: 180–85, February 1910.

"(*a*) All matters pertaining to contagious diseases are under the direction of the city board of health, which employs a staff of physicians and school nurses to attend to this work.

"(*b*) All matters pertaining to non-contagious defects—to health, growth and development of pupils and teachers, are under the control and direction of the board of education, and conducted in accordance with the health and development law of California."

Los Angeles staff examines approximately 50 per cent of the pupils of each school building, selecting: *First*—Pupils who failed to be promoted. *Second*—Pupils, two, three or more years behind school grade. *Third*—All pupils selected by principals and teachers as needing medical aid (glasses, surgery, etc.). *Fourth*—All pupils of low vitality, unduly nervous, pupils not getting on well in their school work, pupils who need an unusual amount of discipline, of those with criminal tendencies, etc. *Fifth*—All applicants for positions as teachers in the city schools undergo physical examination by the staff. All

teachers in the schools report for examination when requested by the superintendent's office. *Sixth*—Especial examination is given to exceptional children. *Seventh*—School buildings are inspected by the staff. *Eighth*—Follow-up-work is carried on by the staff, by principals and teachers of the schools.

The following is a summary of examinations of Los Angeles city schools:

Approximate summary of ten months' examinations.

A. All pupils examined by staff.

Enrollment of schools when examined	6,647
Number hastily passed upon by examining staff	2,808
Number thorough physical examinations	3,846

Report of physical examination.

Number defective in eyesight	2,012
Notices sent to parents	900

1,112 to be watched by teachers and examined further if pupil's health or school work indicates further examination.

Number defective in hearing	862
Notices sent to parents	175

Most of the defective hearing is due to adenoids and diseased tonsils and lack of care of the nose and throat. For this reason special notices of defective hearing were not sent to parents where the cause was otherwise clearly indicated.

Number defective sets of teeth	1,395
Notices sent to parents	1,395
Adenoids present	1,322
Notices sent to parents	6,670

652 to be watched by teachers and reëxamined if defective hearing or lowered vitality indicate such examination.

Number abnormal and diseased tonsils	1,517
Notices sent to parents	669

688 cases to be watched as in case of adenoids.

Poor lung action and chest development; hard to judge accurately.

Functional heart insufficiency	314
Notices sent to parents	70
Organic heart disease	66

B. Special pupils only examined.

Report of physical examinations of pupils, selected by teachers and examiners, because the need of examination was indicated by poor health, lowered vitality, or poor school work—all pupils undergoing the physical examination by examining staff. Notices sent to parents in almost all cases.

Number examined	1,129
Defective in eyesight	434
Defective in hearing	259
Defective teeth	446
Adenoids present	319
Abnormal and diseased tonsils	332
Functional heart insufficiency	144
Organic heart disease	33

The above pupils were pupils especially selected from different buildings, or pupils of ungraded rooms, or of the special schools, or of the deaf school, or office examinations.

Total number examined for the year, 7,776.

Report of defective growth and vitality and school work accompanying these defective pupils is hard to make. It is mostly measured by the number of repeaters in the schools, by considerable sickness and disease, and by more or less inefficiency and degeneracy.

Report of health examinations of teachers for positions in the city schools.

Number of teachers examined	107

General health below average; hard to judge accurately.

Error in vision uncorrected, 25; wearing glasses, 23	48
Hearing below normal (slightly)	13
Throat only fairly healthy	29
Functional heart disturbances	12
Organic heart disease	5
Lung action below normal	13
Disturbed digestion	10
Slight pelvic weakness	5
Nerve force reduced (somewhat)	15

Sooner or later the main data which enter into the intelligent handling of pupils must depend to a greater or less degree upon physiological age, the physical and mental endurance of children and youths; the character and kind of work should be adjusted primarily to physiological, not *chronological age.*

OAKLAND.

Oakland. [**Superintendent of schools**] The Department of health development and sanitation. *In his* Annual report, 1909–1910. p. 61–64. (Director, N. K. Foster)

"It was impossible to examine every child; hence only those who were defective enough to be observed by the teacher were examined." Number examined, 1,965; not tabulated, 97.

Defective vision	641
Defective teeth	635
Defective breathing	369
Diseased tonsils	369
Diseased glands	327
Adenoids	290
Defective hearing	283
Malnutrition	87
Skin diseases	20
Nervous diseases	11
Orthopedic defects	9
Heart disease	7
Lung disease	7
Defective palate	4
Number with 1 defect	711
Number with 2 defects	739
Number with 3 defects	336
Number with 4 defects	62
Number with 5 defects	16
Number with 6 defects	3

PALO ALTO.

PAYNE, I. D. [The Palo Alto, California, elementary school children: Physical defects and grade retardation] Psychological clinic, 5: 145–47, October 15, 1911. tables.

Of 467 enrolled, 110 reported as having no physical defect.

"Among the 38 children retarded two or more years there are only three who have no reported physical defects. . . . Four are confirmed cigarette smokers. . . . Twenty-six have one or more serious physical defects."

PASADENA.

HOAG, Ernest Bryant. Some new problems in school hygiene. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 205–208.

In the schools of Pasadena, California.

"The plan consists or two parts or features: 1. A scheme for a partial health survey to be made by the pupils themselves. 2. A scheme for a more extensive health survey on the part of the teachers.

"The questions given . . . in the sixth, seventh and eighth grades . . . with a general summary of the answers: 1. Have you ever had much sickness? Yes, 88. 2. Are you feeling well now? No, 9. 3. Do you eat lunch every day? No, 8. 4. Do you eat lunch at school? Yes, 79. 5. Do you drink coffee? Yes, 128. 6. Do you drink tea? Yes, 125. 7. Do you have a ventilated bedroom (open window)? Yes, 263. 8. Have you ever been to a dentist? No, 71. 9. Do you ever use a toothbrush? No, 53. 10. Do your eyes smart in school? Yes, 57. 11. Do they trouble you in any other way? Yes, 71. 12. Can you read writing on the blackboard easily from your seat? No, 39. 13. Do you often have headache? Yes, 65. 14. Do you notice any blurring of the print? Yes, 50. 15. Do you have earache? Yes, 38. 16. Can you hear the teacher easily? No, 60. 17. Do you tire easily? Yes, 82. 18. Do you work any out of school hours? Yes, 122 (Average 1½ hours per day). 19. How much do you study at home? (Average 40 minutes.) 20. Do you take regular exercise? Yes, 238.

"Total number of pupils questioned, 270. Average age of pupils in eighth grade, 15 years. Average age of pupils in seventh grade, 14½ years Average age of pupils in sixth grade, 14⅛ years."

Pasadena. [**Board of education**] Report of medical examiner. *In its* Annual report, year ending June 30, 1910. p. 36–38, 41. table. p. 41.

Signed: R. C. Olmstead, M. D.

"Practically every child in the kindergarten and grades receives a physical examination. All high school students receive attention when necessary."

Total number examined	4,036
Defective in eyes	685
Defective in ears	117
With nose defects	202
With throat defects	240
With defective teeth	1,230
Malnutrition	195
Nervous defects	48

COLORADO.

BATES, Mary Elizabeth. The Colorado method for the examination and care of public school children. *In* [American academy of medicine] Conservation of school children. Being the papers and discussions of a Conference at Lehigh university, April 3 and 4, 1912 . . . Easton, Pa., Printed for the American academy of medicine, 1912. p. 216–37.

Reprinted.

Requires teacher or principal in every public school, or county superintendent, during the first month of each school year, to test the sight, hearing and breathing of all pupils under his charge; examinations to be made without using drugs or instruments, or coming in contact with said child; and shall keep a record and make written report of such examinations to the State superintendent of public instruction as he may require. Every teacher shall report the mental, moral and physical defectiveness of any child under his supervision, to the principal or county superintendent.

[**CALLICOTTE, William Riley**] Physical examination required first month [of each school year] Colorado school journal, 27: 25–27, September 1911.

Colorado law:

"It shall be unlawful for any person having the care or custody of any child willfully to cause or permit the life of such child to be endangered, or the health of such child to be injured, or willfully to cause or permit such child to be placed in such a situation that its life or health may be endangered, or in any other manner injure such child."

For violation of this act, a fine of $100 or a three-months imprisonment may be imposed. It is the duty of county and city superintendents to enforce the law for physical examinations and report the results to the Superintendent of public instruction.

Colorado. State superintendent of public instruction. Physical examination [of school children] *In her* Report, 1909–1910. Denver, Colorado, The Smith-Brooks printing co., State printers, 1910. p. 14–17.

Law enacted by the Seventeenth General Assembly.

In 54 counties complying with the law, 92,427 were examined; 41,546 were found defective, physically, mentally or morally to a degree sufficient to warrant reporting their condition. Defects in sight in 26,978, hearing in 6,155, breathing in 8,045, and other unclassified defects, 21,825. There were 3,071 mental defectives and 746 moral defectives.

WIXSON, Helen Marsh. Health of school-children. *In* National association for the study and prevention of tuberculosis. Transactions, 1911. Philadelphia, Pa., Press of Wm. F. Fell company, 1911. p. 95–101.

"It is time for us to have a little sane legislation regarding physical examinations in the schools—time for us to relieve overburdened teachers by giving this work to specialists and trained nurses, and and while about it, why not set up a minimum standard of clothing, cleanliness, nutrition, and education, and if the standard is not maintained by the child, make the parents responsible?"

[COMPILER'S NOTE.—Since medical inspection and care are for those school children whose *parents are not able financially or educationally to do these necessary things for these children*, how could a "standard" be compelled? Why not say, rather, "make the municipality or State that *is* able, do these things"]

CONNECTICUT.

GOODENOUGH, Edward Winchester. Some problems connected with the medical inspection in schools. *In* Connecticut State medical society. Proceedings, 1911. Published by the Society. p. 203–13. table.

In Waterbury, Conn.

Up to 1910, Waterbury had no permanent records of school inspection, either for department of education or department of health.

"My first duty was to observe the heating, ventilation and sanitation of the different school buildings. . . .

"I have attempted to inspect all the children up to and including the fifth grade each month; . . . to inspect the grammar grades in some manner each term. . . .

"The Waterbury dental society has done . . . an enormous amount of work in tabulating the condition of the children's teeth."

Discussion: p. 214–221.

New Haven. Board of education. Medical inspection. *In its* Annual report, year ending December 31st, 1910. p. 37–39.

Five school physicians and three school nurses.

Main effort of the physicians is to prevent the development of contagious disease. Whenever a pupil in school appears to the teacher to have symptoms of a contagious disease, the principal immediately summons the school physician. School physicians do not prescribe in any case.

SLOAN, Thomas G. The medical supervision of school children in South Manchester, Conn. Medical record, 82: 339–42, August 24, 1912. tables.

In the fall of 1906, out of over 1,600 school children, 72 were found to be a year or more behind grade, 51 whose backwardness could not be explained; on examination, 50 of the 51 had one or more defects. In 1907, 1,437 were examined for eye defects, and 91 were found needing treatment. In 1908, 204 were examined for nose and throat troubles, 126 found needing operations or treatment. In January 1910, a special examination was made of 1,564 pupils, all who were at that time in attendance; results as follows:

Number examined	1,564
Defective teeth (needing extraction)	295
Enlarged tonsils	113
Adenoids	73
Adenoids and teeth	71
Tonsils and adenoids	62
Tonsils and teeth	44
Adenoids, tonsils and teeth	39
Teeth and markedly enlarged cervical glands	15
Enlarged cervical glands	4
Miscellaneous	16

In October 1911, 1,739 children were examined and defects found as follows:

Teeth (including those needing extraction and those needing filling)	707
Tonsils, needing operation	83
Tonsils moderately enlarged	123
Adenoids (marked)	37
Cervical glands	23

The medical inspector is in his office at the school, with the school nurse in attendance at 10 a. m., two mornings a week. All children the teachers think need attention are sent to him. No child he sends home is permitted to attend school until seen by medical examiner.

In 1910–11 South Manchester suffered from a long-lasting epidemic of scarlet fever, starting before the opening of schools in the fall. The time lost by ill children amounted to 3,696 days; excluded children, 4,394 days. Total cost of time lost, about $2,500; with medical inspection cost, etc., and cost to families, total about $15,000. Open-air school was opened January 25, 1911.

Therapeutic value of medical inspection of school children. American medical association. Journal, 55: 596–99, August 13, 1910. tables.

Presents three view-points of the relation of the child to the matter in hand: "(1) Has the child, while in attendance at school, any need of medical supervision? (2) The relation of the child to the community at large. (3) The consideration of the child as an individual" (Kenna, W. Matthew. Regarding medical inspection of school children in New Haven. Table of results, also included in the excerpt given at length in this article).

Table of results of examination of 400 school children, New Haven, Conn. "A" denotes defect present, not requiring treatment; "B," treatment advisable; "C," treatment imperative:

	Good.	Fair.	Poor.
Apparent physical condition	171 A	104 B	125 C
Adenoids	19	35	2
Anemia	31	16	0
Cardiac disease	5	10	0
Defect of nasal breathing	23	4	0
Defect of palate	0	0	1
Defect of teeth	60	68	59
Skin:			
Contagious	0	0	1
Parasitic	0	2	5
Vermin	2	2	52
Hypertrophied tonsils	64	46	1
Orthopedic defect	9	3	0
Pulmonary disease or tuberculous condition	1	4	0
Enlarged glands	15	2	0
Vision:			
Myopia or astigmatism	8	63	11
Conjunctivitis	7	0	1
Granular lids	8	1	0
Nervous diseases	13	7	1
Malnutrition	22	11	0
Defect of hearing	1	5	0
Backwardness	47	0	0

These statistics "have not before been announced," states the writer.

DISTRICT OF COLUMBIA.

MACATEE, H. C. School laggards. Some comments on the local situation. Washington medical annals, 10: 149–59, June 1911. tables (from Ayres, L. P.)

Reprinted.

Conclusions:

"1. The public schools here exhibit the same problems of retardation and elimination as do those of other cities.

"2. The schools here are no better adapted to the average child with the average health history than are those in other cities.

"3. Educators should modify the school course so as to allow for the factor of illness; physicians should endeavor to restore children to the schools as soon as possible so as to avoid elimination from age and grade disparity.

"4. Special schools have been established here for the care of incorrigible and mentally defective children; other special ungraded schools ought to be established to care for normal children during temporary retardation, in order that they may be restored to their grades, and for physically defective children so as to adapt the schooling to the capacity of each child. Such schools should perform the same relative function in the schools as the convalescent hospital is designed to subserve in the care of the sick.

"5. The problems of retardation carry new things for the physician engaged in work among children to know.

"6. Adequate medical inspection is essential to the reduction of retardation in healthy children and in physically defective ones.

"7. Medical inspection as now provided is inadequate.

"8. School nurses are indispensable for the best results of medical inspection.

"9. Congress is not willing to give to this city what is everywhere recognized as an essential weapon against retardation of school children, having at the last session reduced the medical inspection service and having failed to provide for school nurses.

"10. The Dillingham bill providing for the establishment and maintenance of a laboratory for the study of defectives in the District of Columbia should be enacted, both for its broad general purposes and also for the proper study and classification of defective school children.

"11. Retardation is in part brought about by repeated failures to succeed and thus may be a causative factor in the neurasthenias and psychasthenias so frequent in American life. The problem should engage the attention of physicians."

FLORIDA.

BYRD, Hiram. Medical inspection of schools. *In* Florida. State board of health. Annual report, 1911. Deland, Florida, The E. O. Painter printing co., 1912. p. 331–41. (State board of health of Florida. Publication 96, June 1912)

Largely, the extent of hookworm disease in Florida and the need for medical inspection as a factor in its eradication.

"Let us pause here long enough to see if we can get the full import of this one disease.

"White people suffer from it more than negroes.

"Children suffer from it more than adults.

"The rural population suffers from it more than the urban.

"Our inquiry will be then to determine the cost in dollars and cents that hookworm disease entails upon our rural white children.

"Fifty-five per cent of our people are white. Seventy per cent of our people live in the country. Therefore 28 per cent of our white school children live in the country.

"A canvass was made by the State board of health covering 6,000 rural school children and it was found that 52 per cent of them were hookworm sufferers.

"From which it is seen that 15 per cent of the total school children of the State are suffering from hookworms.

"The extent to which the sufferer's vitality is lowered varies. But it can be measured with a fair degree of accuracy by the color of the blood. That is to say, rich, healthy, deep red blood is indexed at 100. The hookworm sufferer's blood becomes pale and watery in proportion to his infection. And as the infection gets worse and worse the color index of the blood runs down and down, 90, 80, 60, and even to 20 per cent of the normal. Perhaps an average color would be 70 per cent. But, to be especially conservative, we will assume that it is not so low as that. We will assume that it is 80 per cent. That means that the sufferer is off 20 per cent in strength, 20 per cent in intellectual energy, 20 per cent in power of learning.

"Now if 15 per cent of our school children are off 20 per cent in power of development, that lowers the whole power of development of the school children of the State by 3 per cent.

"We expend upon our public education now about $2,000,000 a year. Three per cent of $2,000,000 is $60,000.

"Are these figures facts? Verify them for yourselves. Sixty thousand dollars of our all too scant educational fund wasted annually—literally devoted to the maintenance of hookworms. Sixty thousand dollars for hookworms, and we haven't taken into account any of the negro population. Sixty thousand dollars' loss, and we haven't taken into account any children under or over school age. Sixty thousand dollars' loss annually."

Florida. Committee on sanitation and public health for the schools of Florida. Report and recommendations. *In* Florida. State board of health. Annual report, 1911. Deland, Florida, The E. O. Painter printing co., 1912, p. 325–27.

Chairman, Hiram Byrd.

Recommendations:

"(*a*) That 'Medical inspection of schools' be defined as a systematic effort to protect improve the health of any or all pupils. With this in mind we would recommend—

"(*b*) That the time is ripe for the medical inspection of schools.

"(*c*) That the individual school, whether large or small, must of necessity be the unit of operation.

"(*d*) That medical inspection may be as complete or as partial as the individual school desires or can afford.

"(*e*) That it may be carried out either by the board of education or the board of health. (This refers strictly to the local board of education and local board of health.)

"(*f*) That it may be undertaken by any school in the State, however large, or however small.

"(*g*) That the larger schools can make it more thorough and complete than the smaller one; but

"(*h*) That no school is too small to introduce some definite systematic regéme looking to some form of protection of the health of the pupils.

"NOTE.—In many schools, particularly in the rural districts, the most important public health problem is hookworm eradication. This can be accomplished by the teacher, pupils, and parents, without any further advice than they can get from the State board of health.

"(*i*) That where it can be afforded medical inspection should be carried out by the combined efforts of the teacher, the doctor, and the nurse.

"(*j*) That where all three can not be afforded, by the teacher and doctor without the nurse.

"(*k*) That where a doctor can not be had, it can be carried on by the teacher.

"NOTE.—There is a considerable amount of work that the teacher can do without the assistance of a doctor. In Massachusetts the teachers examine the eyes of the pupils, not to determine what ails them, but to determine whether they are normal or abnormal. If any marked deviation from the normal is found, the pupil is referred to a physician.

"(*l*) This presupposes a certain amount of definite information of a more or less technical character, that in the ordinary course of events the teacher does not get, to which end we believe that the teachers should receive definite instructions as to how to conduct such examinations as may be deemed advisable.

"(*m*) That the meeting of the teachers in the several county institutes, and at the State teachers association, and the summer normals, and the colleges, afford convenient fora from which the necessary instructions can be given.

"(*n*) That the State board of health is the logical body to undertake the instruction of the teachers for this work, hence we believe

"(*o*) That the immediate need is for the State superintendent of public instruction, and the State health officer, to cooperate in providing for a course of demonstrations in all the summer normals and similarly in all the colleges which have normal departments, and

"(*p*) That these demonstrations shall cover such features as may be adjudged of vital importance by the State health officer and the State superintendent of public instruction."

STILES, Charles Wardell. Frequency of hookworm disease or ground itch anemia among public school children in Southern Florida. Public health reports, 25: 351–54, March 25, 1910.

"Summary of 1,306 pupils in 8 schools in 6 towns in 3 counties.

	Number seen.	Number of suspects.	Per cent of suspects.
Boys	596	409	68.6
Girls	710	322	45.3
	1,306	731	55.9

"These statistics of school children are exceedingly significant, from various points of view:

"First. These children are growing up under a severe physical handicap. If they do not undergo medical treatment, not only will this handicap be appreciable in deaths due directly to hookworm infection, but this infection will so reduce their vitality that they will more readily fall a prey to other diseases, such as tuberculosis, pneumonia, malaria, etc.

"Second. Their physical development is of necessity inhibited, and many of them may reach maturity stunted in their growth.

"Third. Children in this condition can not possibly be expected fully to assimilate the education which is being given to them, and as a result the money being spent on education is not giving to these towns full returns. . . .

"Fourth. Not only these three counties but all other parts of the South visited by winter tourists should awaken promptly to the self-evident fact that the danger is present that such tourists will soon avoid those rural portions of the South in which the soil pollution is so extensive as to lead to 55.9 per cent hookworm infection among the school children. . . .

"At least five of the teachers in the schools visited showed clear and pronounced effects of hookworm infection."

GEORGIA.

Atlanta. Board of education. Department of medical inspection. *In its* Report, January 1912. p. 231–32.

Signed: Robert G. Stephens, M. D.

Medical inspection established in Atlanta, winter of 1909. Force, to date, consists of chief examiner, one white assistant, one colored, four white nurses and one colored.

"Method pursued is that of routine examination. A school is visited daily by an examiner and nurse until each child in that school has received a physical examination." Defects are noted on individual cards. "If the defect is remediable a notice card is sent to the parents suggesting that dental or medical attention be given. . . .

"Out of 5,838 recommended for treatment in 1910–1911, 50.9 per cent received treatment, but in order to get this number treated the nurses made 4,814 visits to homes.

"Schools examined for the first time furnish in every instance from 60 to 94 per cent of the children defective."

Augusta and Richmond County, Georgia. [Board of education] Medical inspection of schools. *In its* Annual report, 1910. p. 22–23; 111.

"During the past year we have had a very satisfactory experiment with . . . district nurse visitation and inspection at the John Milledge school. The district nurse of the fifth ward has attended that school for two or three hours each week, has visited all the grades, and has had referred to her all suspected cases of disorder or disease. She then refers the cases to the regular physician of the city, or to specialists. . . .

"There is also a movement on the part of the board [of education] to engage the cooperation of the board of health by which . . . at least one nurse and one physician shall be especially set apart for school inspection . . . as a part of the regular work of the board of health . . . by which a complete system of medical inspection can be inaugurated for all the schools."

FORT, A. G. Examination of county school children. Medical association of Georgia. Journal, 2: 7, May 1912. table.

"The combined results of the inspection of three rural counties in Georgia are as follows:

	White.	Colored.	Total.
Anemia	894	774	1,668
Defective vision	292	28	320
Defective teeth	596	368	964
Enlarged tonsils	406	252	658
Adenoids	400	144	544
Defective heart sounds	77	20	97
Sounds indicative of pathological conditions in lungs	33	72	105
Diseases of ears	110	2	112
Number examined	1,663	1,556	3,219

"In the inspection of the sanitary surroundings of 59 of these schools, we found 17 privies only, and all of these poorly constructed. Is it any wonder then that 1,668 gave clinical evidence of hookworm infection and microscopical examination revealed that an average of 74.7 per cent of the suspects were infected?"

FORT, A. G. [Hookworm disease among Georgia school children] American school board journal, 43: 39, October 1911.

Defectives among the children of Stewart, Webster and Tift counties, Georgia.

	White children.	Negro children.
Number examined	1,663	1,556
Number defective	1,348	888
Normal	315	668
Number of defects	3,460	1,721
Hookworm suspects	894	774
Defective eyes	292	28
Enlarged glands	470	168
Defective teeth	596	368
Enlarged tonsils	406	252
Adenoids	400	144
Skin defects	6	15
Heart disease	77	20
Lung diseases	33	72
Bone diseases	5	5
Ear diseases	110	2

Savannah and County of Chatham. [Board of education] Health and sanitation. *In its* Annual report, year ending June 30th, 1910. p. 16–18.

"Whenever in the judgment of the principal a pupil of the public schools needs medical treatment . . . he shall notify the parent or guardian. . . . Such pupil shall not be permitted to continue in attendance upon the public schools until a certificate from the attending physician shall have been presented to the principal."

This plan has been in operation since January 1, 1910. Cases reported, 191.

[Stephens, Robert G.] Medical inspection of school children. *In* Georgia educational association. Proceedings and addresses, 1911. Atlanta, Ga., Bennett printing house. p. 65–73.

General résumé, by the medical examiner of schools, Atlanta, Ga.

"Out of a group of 2,375 examined in Atlanta in 1909, 1,452 were defective, or 61.1 per cent; out of 2,166 in Atlanta examined in fall of 1910, 1,653 or 76.2 per cent were defective."

Defects: Atlanta, 1910.

Nutrition	50
Anaemia	28
Glands	192
Heart	11
Skin	42
Nervous	6
Teeth	1,372
Tonsils	375
Adenoids	257
Eyes	189
Lungs	9

Two medical inspectors and four nurses work under control of board of education. Two weeks are allowed to elapse following notification to parents of defects, after which time a nurse visits the home of each defective child who has not returned a card signed by physician or dentist.

IDAHO.

HYDE, George E. Medical inspection of schools. Northwest medicine, n. s. 3: 340–43, December 1911.

Rule V, of the State board of health of Idaho, requires the county physician to "report, on or about September 1 of each year, the sanitary condition of the public schools of the county in which he resides."

The author receiving permission to examine the school children in his home town, Rexburg, "to see if the findings of inspection in other parts of the county could be bourne out" by his personal investigation. Teachers tested the eyes with Snellen's chart, took records of heights and weights, ages, grades, number of years attending school, and history of contagious diseases; Dr. Hyde examining the ears, nose, throat, and teeth.

Results.	Cases.	Per cent.
Deafness	16	4
Adenoids	8	2
Hypertrophied tonsils	54	14
Mild eye defect:		
Ranging from 20/30 to 20/40	58	.....
Ranging 20/50 to 6/200	41	11
(31 of these pupils had headaches on reading; 12 had change of posture at desk in order to be able to write their lessons; 11 could not see the lesson written on the blackboard, from where they sat in their room.)		
Defective teeth (of these, 25 per cent in very bad condition)	.....	55
Mitral regurgitation (histories of rheumatism in 4 cases)	5	.....
No discoverable defects in	.....	28

"These results . . . show that the children in this western country have not nearly the same number of physical defects among them as examination shows exists among the schools of the East."

ILLINOIS.

Chicago. Board of education. Department of child-study and educational research. Child-study and educational research. *In its* Report of the Superintendent of schools for the year ending June 30, 1912. p. 44–50. table.

From Report of directors, D. P. MacMillan.

"Of the whole number of children, 2,095, examined during the year . . . with the exception of truants and incorrigibles . . . the maximum number, 469, falls in that group which is made up of children with nervous disorders, particular physical defects or general constitutional depletion. In the majority of cases they proved to be extremely backward pupils."

Children examined from July 1, 1911, to June 30, 1912.

Blind or defective vision	115
Deaf or defective hearing	125
Crippled	58
Truants and incorrigibles, at office	34
Truants and incorrigibles, parental school	466
Subnormals	259
Defective in speech (persistent cases only)	66
Tuberculous (not including anaemics)	12
Epileptics (most aggravated cases only)	13
Children with constitutional depletion or nervous disorders or specific physical defects	469
Special cases: Unusually bright children, moral delinquents, mental aberrants	276

Chicago. Department of health. Bureau of contagious diseases. Medical school inspection. *In its* Report, 1907–1910. p. 22–33, 39. tables. chart. forms.

"For the supervision of approximately 400,000 school pupils in the public and parochial schools . . . the city employs 100 medical health officers and 41 nurses, all of whom secure their appointments by competitive civil service examinations. For administrative purposes 5 medical health officers are selected to supervise without extra pay, the other 95; and 2 nurses, one receiving $15 per month more than the others, supervise the other 39. The city is divided into 95 districts, to each of which is assigned a medical health officer, whose duty it is to inspect the pupils in the schools of the district. In addition, he has control and supervision of all contagious diseases in the territory to which he is assigned. . . .

"The medical health officer makes daily visits to each school assigned him, commencing work at 9 a. m. At the beginning of the term he makes a rapid inspection of all pupils to determine if any . . . bear evidence of a contagious disease.

"For this preliminary inspection the health officer visits each room, stands with his back to a window, and has all pupils in the room file past him. . . . The pupil . . . exposes to view palms of hands and wrists; with the fingers of one hand pulls down the eyelid, exposing the conjunctiva; opens the mouth and puts out the tongue. This hurried inspection is made by the physician without touching the pupil. . . . After the completion of this preliminary inspection . . . the regular forenoon inspection is taken up.

"Inspections and examinations at high schools are done only on request or . . . emergency. Parochial schools desiring . . . have the same service as the public schools. Inspection for contagious disease in parochial schools is enforced. In making physical examinations, we begin with the pupils in highest grade, completing one school before beginning 'physicals' in another.

"The daily routine is as follows:

"Inspection is first made for contagious diseases, after which ten or more physical examinations are made.

"The health officers request principals to have all pupils in readiness for inspection who have been absent four consecutive days . . .

"All children to be examined are sent to a room by themselves. . . . Inspection is made with reference to communicable diseases and vaccinal status of pupils.

"Pupils with marked defects needing immediate attention . . . referred by the principal, teacher or nurse, are examined without delay. If agreeable to the principal, Friday is [the] . . . day for such emergency examinations.

"Health officers are forbidden to make any suggestions as to the treatment or management of pupils who are sick. This command is imperative.

"Beginning November 1, each year, medical officers vaccinate free of charge any child or pupil who may apply to them for vaccination; . . . vaccinate no child without the consent of parent or guardian.

"Health officers carry with them the following supplies Circulars on Prevention of consumption; The vaccination creed; special circulars on each of the infectious diseases, and warning slips to distribute and post in public places; wood spatulas for tongue depressors [Each tongue depressor is used only once and then burned]; culture media and outfits for Widal test."

The blanks follow in the order in which they are used: Family history; physical record; medical inspection of schools exclusion; non-exclusion notification of abnormal condition; health officer's daily report; card for child to take to physician and return to school nurse; health officer's monthly report.

A summary of the reports of the school medical inspectors of the Department of Health, of Chicago, for the year 1909, gives the following statistics:

Of the total number of children examined, 123,897 (51 per cent) were defective.

Defects.	Per cent of the total defects.	Defects.	Per cent of the total defects.
Teeth defects	32.3	Skin diseases	1.8
Tonsils hypertrophied	20.0	Orthopedic defects	1.0
Vision defective	15.9	Heart diseases	.6
Glandular enlargement	12.3	Mentality defective	.5
Nasal affections	4.8	Nervous diseases	.4
Adenoids	3.0	Pulmonary diseases	.3
Anemia	2.6	Palate defects	.2
Nutrition imperfect	2.2	All other defects	.1
Hearing defective	2.0		

East St. Louis. Board of education. Retardation. *In its* Annual report, 1910–11. p. 34–46. tables (Grades 1–12)

"Of 534 puplis marked to repeat the work of next term," 48 suffered from physical defects; 44, mental defects.

In all white schools, pupils, 6,842; over age, 676, or 39 per cent. In all colored schools, pupils, 1,082; over age, 714, or 69 per cent.

HEDGER, Caroline. Physical examination of below-grade children. Illinois medical journal, 15: 433–39, April 1909. tables.

Examination of 208 (125 boys; 83 girls) below-grade public school children in Chicago.

	Boys.	Girls.
	Per cent.	*Per cent.*
Cervical glands	89.6	95.1
Goitre	23.2	25.3
Hypertrophied tonsil	55.2	65
Irregular pulse	23.2	19
Hemic murmurs	50.4	36.1
Transmitted apical murmurs	11.2	10.8
Lateral curvature	20	39.7
Negative lungs	41.6	43.3
Suspicious lung findings	40	43.3
Positive lung findings	18.4	13.4
Cough	8	19
Pediculosis	40	72.3
Bad teeth	25.6	25.2
Tea and coffee	99.1	100

Quincy. [**Board of education**] Medical inspection. *In its* Annual report of the public schools, school year ending June 30, 1911. p. 31–38. tables.

Total number inspected	3,018
Defective	1,191
With defective eyes	284
With defective hearing	87
With throat defects	770
With nasal defects	336
With defective teeth	292
With malnutrition	5
With nervous trouble	23
With kidney trouble	2

Physicians assigned to the various schools, for the inspection, at a joint meeting of the committee of the Adams County medical society and the board of education.

Signed by Committee of board of education, *and* Superintendent of city schools Edward G. Bauman.

KENTUCKY.

HANCOCK, D. O. School sanitation. Kentucky medical journal, 9: 724–26, October 1, 1911.

Proposes a "Health committee for each school, composed of four members, the teacher, a physician, and a woman and a man who are each patrons of the school. . . .

"That this committee have immediate charge of health matters in the school and district; that it be organized, president, secretary and medical inspector; that it have meetings once each month and oftener if needed; that it keep records of its doings; . . . that this committee see to it that the schoolhouse is properly constructed and kept; that conditions are such as will insure the comfort and health of teachers and pupils; that contagious diseases are immediately controlled; that infectious diseases are not carried to the school.

"There is a useless and criminal sacrifice of time, comfort, health and life in our schools which should not exist. . . . The remedy is immediate supervision by those who are on the field and who have personal interest at stake."

Following this address of Dr. Hancock before the Henderson county teachers' institute, August 24, 1911, a resolution was adopted:

"*Resolved*, That the county superintendent of schools is hereby requested by the institute to appoint a health committee as suggested by the paper of Dr. Hancock, in each school district in Henderson County; that the teacher and trustee of each school are hereby requested to organize the committee thus appointed and to assist it in doing the work contemplated; that the county superintendent have printed a list of these committees for use in organizing for school sanitation."

LOUISIANA.

New Orleans. Superintendent of schools. [Report of the] Department of hygiene. *In his* Annual report, 1910–1911. p. 85–142. tables.

Reported as defective by grammar and primary grade teachers, 2,339 pupils; and 85 kindergarten pupils.

	Boys.	Girls.
Total examined, 1,303:		
Defective hearing	22	20
Enlarged glands	454	323
Defective vision	193	280
Defective breathing	158	91
Defective teeth	499	360
Hypertrophied tonsils	161	151
Adenoids	77	50
Other defects	96	50

From September 26 to June 16, the total was:

Scarletina	231
Diphtheria	145
Measles	660
Smallpox	12

Among nonquarantinable exclusions were:

Impetigo	57
Scabies	215
Pediculosis	197
Eczema (chronic)	27

Applicants for teachers' positions and pupils entering normal school required to stand a physical examination.

MAINE.

Augusta, Maine. Board of education. Medical inspection. *In its* Annual report, 1910–11. p. 29–33. tables.

"Organization of this department is as follows: First, the employment of two physicians. . . . Second, an annual ear and eye test, conducted by the teachers. . . . Third, an annual inspection of the teeth by the dental inspector. . . . Fourth, the distribution of the health leaflets issued by the State board of health. . . .

"Medical inspectors shall visit and inspect monthly each building assigned to them; shall examine any teacher or school employee whenever such examination is necessary; . . . shall visit each schoolroom at least once a year and make a general examination of the pupils; . . . shall examine all pupils referred by the board, the superintendent, principals, or teachers; . . . and shall exclude from school any employee or pupil whose presence is dangerous to the health of the school. They shall furnish teachers such information and instruction as they may deem necessary in the interest of health. They shall report to the superintendent any insanitary condition in or around school buildings. . . . Medical inspectors, and school employees acting as such, shall give no treatment."

TABLE III.—*Eye and ear test.*

	2d grade.	3d grade.	4th grade.	5th grade.	6th grade.	7th grade.	8th grade.	9th grade.	High	Rural.	Total.
Number examined	157	156	167	117	131	121	115	76	255	163	1,458
Number having eye trouble	44	32	29	13	11	9	11	6	28	25	208
Number having ear trouble	12	9	5	2	.....	10	2	1	2	6	49
Total number defectives	40	35	27	12	11	15	13	7	29	25	214
Per cent of defectives, all kinds	25.5	22.4	16.2	10.2	8.4	12.4	11.3	9.2	11.2	15.3	14.6

TABLE IV.—*Showing results of dental inspection in the schools.*

	Kindergarten.	Grade.								First year high.	Rural.	Total.
		1	2	3	4	5	6	7	8	9			
Number examined	60	173	135	142	157	115	116	110	98	68	81	135	1,390
Number who received dental attention	16	19	30	22	35	33	39	50	60	48	57	22	431
Number of cases teeth need cleaning	50	156	132	104	142	93	92	76	64	43	49	118	1,119
Number of cases decayed teeth	46	151	127	97	145	88	85	68	61	34	50	123	1.075
Per cent having defective teeth	76.7	87.2	94.0	68.3	92.3	76.5	73.9	61.8	63.5	50.0	61.7	91.1	77.3
Per cent who had received dental attention	26.6	10.9	22.2	15.0	22.3	28.7	33.9	45.4	62.5	70.6	70.4	16.0	31.0

Maine. State superintendent of public schools. Medical inspection. *In his* Report, 1910. Augusta, Kennebec journal print, 1910. p. 105–14. map.

Map showing States having medical inspection, p. 114.

Law in effect, in Maine, July 1, 1909.

MASSACHUSETTS.

HANSON, Justice G. Medical inspection in public schools. Boston medical and surgical journal, 163:242–43, August 11, 1910.

"If careful systematic inspection is carried on throughout the State, succeeding generations because of it will be less burdened by physical and mental cripples, will be more free from contagious and infectious diseases, and will have a more intelligent conception of disease, and its cause and effect."

Discussion: p. 243–45 (Dr. Thomas F. Harrington.)

MARTIN, George H. Medical inspection in the public schools of Massachusetts. *In* Massachusetts. Board of education. Annual report, January 1911. Boston, Wright & Potter printing co., State printers, 1911. p. 164–193. tables.

Reprinted.

"All of the 33 cities and 297 of the 321 towns report in the annual school returns for 1909 that school physicians have been appointed. . . .

"In other words, 98 per cent of the school pupils in cities and towns are having nominal medical inspection. . . .

"From the returns received at the office of the board of education and the published reports of city boards of health, it appears that during the year 1909 there was spent for the medical inspection of school children the sum of $101,745.59. This is an average of about 20 cents per child. But as in some cities, where the inspection is in the hands of the board of health, the parochial schools are inspected as well as the public schools, and in Boston, which has about one-fifth of all the enrolled children in the State, the cost of inspection is much above 20 cents, the actual average cost outside of Boston is much below 20 cents.

"What school authorities should do is stated by the statutes . . . to be twofold:

"First, to provide for a general examination of all the children in the public schools at least once a year for any defect or disability tending to interfere with their school work.

"Second, a special examination of children (*a*) who show signs of being in ill health or of suffering from infectious or contagious disease; (*b*) who are returning to school after absence on account of illness or from unknown cause. . . .

"There is another function of the school physician. . . . The law says he shall make 'such further examination of teachers, janitors and school buildings as in his opinion the protection of the health of the pupils may require.' . . .

"Dental clinics for school children have been established in a number of localities.

"In Lynn a dental dispensary was carried on in 1910 in connection with a neighborhood house. Fifteen Lynn dentists and 10 out-of-town dentists gave their services. A nominal charge was made of 15 cents for cleaning, 10 cents for extraction and 25 cents for fillings. One thousand and ten operations were performed upon children. . . .

"In Winchester . . . the dentists in town, nine in number, each give one-half day a week to work with needy cases, at a nominal charge of 25 cents per case. . . . The school nurse works in cooperation with the dentists. . . .

"The school returns show that the eye and ear tests have been given as required by law in all the towns and cities, excepting Otis and Mount Washington. Four annual examinations have been made since the law was passed. . . .

	1907	1908	1909	1910
Number of pupils examined	432,464	437,435	441,463	454,058
Number defective in vision	96,607	81,158	73,129	71,902
Number defective in hearing	27,387	22,601	20,167	17,329
Per cent of defectives in vision	22.3	18.5	16.5	15.8
Per cent of defectives in hearing	6.3	5.1	4.5	3.8

"One or more nurses are now employed in the schools of Amherst, Boston, Brocton, Brookline, Cambridge, Canton, Holyoke, Lancaster, Leominster, Lowell, Northampton, Northborough, Walpole, Waltham and Winchester."

SNEDDEN, David [Samuel] Problems of health supervision in Massachusetts. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 18–26.

Also in Journal of education, 75: 458–60, April 25, 1912.

"I. Legislative provisions.

"II. Application of laws.

"III. Problems of health supervision: A. How can health supervision be planned and organized so as to promote effective administration? B. What should be the distribution of the functions of health supervision among various possible agencies, such as teachers, nurses, physicians, physical trainers, and the home? C. What must be the character and training of those cooperating in this work? D. What shall be their relation to the existing school authorities? E. What will be the necessary financial cost of such service? F. What shall be the control of health supervision over the actions of parents and other non-school agencies affecting the children; and G. Is there needed provision of facilities for investigation and supervision by state authorities?"

BOSTON.

AYER, S. H. Medical inspection of schools in Boston, Mass. Boston medical and surgical journal, 164: 456–60, March 30, 1911.

Historical sketch; salaries, etc., Boston and New York.
Read at the Boston health conference, 1915, February 20, 1911.

COUES, William Pearce. The medical inspection of schools in Boston, the present limitations and future possibilities. Boston medical and surgical journal, 160: 746–48, June 10, 1909.

"The teachers in the various rooms send a slip down to some central place with the child's name, number of the room and symptoms of trouble. . . . The inspector summons the children to be examined . . . [and] examines them, writing on the slip the diagnosis and advice. He sees only the children whom the teacher sends slips for, that is, the primary necessity for medical inspection devolves on the judgment of the teacher. . . .

"One of the conditions which should be changed . . . so that the teacher can be freed from responsibility and care in this matter."

COUES, William Pearce. Some problems of school inspection. Boston medical and surgical journal, 164: 814–16, June 8, 1911.

Result of examination of 158 retarded pupils.

	Number.	Per cent.
Defective vision	41	25.9
Defective hearing	2	1.2
Chronic enlarged tonsils	122	77.2
Defective or carious teeth	127	80.3
Marked pallor	34	21.5
Markedly undersized	3	1.8
Extremely nervous	1	.63

"It is of interest to compare the result . . . with that of[1] 212 children of normal mental caliber; . . . 72 per cent of these children showed chronic enlarged tonsils; 50 per cent showed carious teeth. . . . It would seem from these statistics that chronically enlarged tonsils and the generally accompanying adenoids had little to do with the mental backwardness of these children, but that carious teeth might play a considerable rôle in the causation of this condition."

GALLIVAN, William J. Child hygiene. Monthly bulletin of the Health department of the city of Boston, 1: 29–36, 50, February 1912. tables.

Division of child hygiene "was created in March, 1910. It is concerned with the physical welfare of every child in Boston from the time of conception up to the age of 16 years. The work is classified . . . as follows: 1. Pre-natal and post-natal work. 2. Medical inspection of schools. 3. Physical examination of licensed minors.

"Medical inspection of schools begins at the kindergarten class and ends with the high schools. Of equal importance are the three objects . . . in view, as follows: 1. The detection of communicable diseases and the exclusion from school of every pupil so afflicted. 2. The protection of every pupil in the schools from contagion unrecognized by parent or teacher. 3. The detection of such defects which if untreated would result in permanent injury to the pupil.

"The board of health is emphatic in its stand against prescribing for any disease or defect discovered. . . . Every case requiring medical or dental aid is referred to the family physician or to the family dentist. Those who are unable to employ professional services are referred to reputable hospitals or dental clinics.

"Under the present system, the school physicians are under the authority of the board of health; the school nurses are under the authority of the school committee. The number of nurses employed is altogether inadequate for the work required. The board of health is ready to employ a corps of nurses to assist in school inspection, but up to the present time, they have not been willing to duplicate a system maintained by the school committee. A transfer, then, of the nurses from the school committee to the board of health would render medical inspection of schools as nearly perfect as human endeavor can accomplish.

"The school population at this date is 123,091. This includes attendance in public and parochial schools. For this work there are employed 82 physicians, who are required to visit every school building on every school morning of the year."

[1] *See same*, 162: 215, February 17, 1910.

Result of the physical examination of school children in Boston for the year 1911–1912.

Total number of children examined	118,781
Total number of pupils without defects	40,850
Total number of pupils with defects	77,931
Defects noted as follows:	
Mental deficiency	501
Defective nasal breathing	9,693
Hypertrophied tonsils	25,121
Defective teeth	51,340
Defective palate	371
Cervical glands	13,711
Pulmonary disease:	
Pulmonary tuberculosis	133
Acute bronchitis	1,169
Asthma	63
Pleurisy	42
Miscellaneous	987
Cardiac disease	3,091
Nervous disease	505
Orthopedic defects:	
Tuberculous	693
Nontuberculous	1,181
Skin	5,243
Rickets	1,019
Malnutrition	3,891

SMITH, C. Morton. Diseases of the skin. Boston medical and surgical journal, 166: 623–24, April 25, 1912.

A complete physical examination, September 13 to December 31, 1911, showed 11,691 children in the Boston schools, having skin diseases. The number was exceeded only by decayed teeth, hypertrophied tonsils, defective nasal breathing and enlarged cervical glands. The common diseases are scabies, pediculosis, impetigo, and ringworm; these four were found in the schools no less than 6,428 times, or 55 per cent of all the skin affections reported. There were 5,257 children with pediculosis.

CAMBRIDGE.

Cambridge. Board of health. School inspection. *In its* Annual report, year ending December 31, 1910. p. 37–41.

Signed: Bradford H. Peirce, M. D.

Concerning the school nurse see p. 40–41.

Six public school and 5 parochial inspectors; and 2 school nurses.

Number of pupils ill and defective, 1,870.

Chicken pox	23
Diphtheria	2
Eczema	35
Gonorrhea	0
Laryngitis	5
Measles	4
German	0
Mumps	6
Scarlet fever	2
Syphilis	0
Tonsilitis	71
Tuberculosis, pulmonary	3
Tuberculosis, other forms	1
Whooping cough	0

Eyes.

Conjunctivitis	79
Corneal ulcer or opacity	4
Keratitis	1
Strabismus	15
Imperfect sight	27

In two schools located in the same section of the city, one, rather closely surrounded, and not well ventilated, has had many cases of scarlet fever and diphtheria for several years. The other school, older and in an open space, has had but two cases of diphtheria and one of scarlet fever in more than a year.

CANTON.

CABOT, Arthur Tracy. School inspection in small towns. *In* American school hygiene association. Proceedings, 1911. Springfield, Mass., American physical education review, 1911. p. 40–43.

Also in Boston medical and surgical journal, 164: 633–34, May 4, 1911.

The town's appropriation being too small for payment for systematic medical inspection, at a town meeting in 1908, a school nurse appropriation of $500 was made, a trained nurse to begin at the opening of the next school year. The work, which also included the parochial school, was found to be so satisfactory that for the year following, $950 was appropriated.

The nurse looks after 900 children; makes examinations at beginning of year, keeping card record; keeps record of any illness they have; children with any infirmity of eyes, ears, throat or general condition, are referred to their physicians; children requiring specialist's aid are taken by her to a public clinic in Boston. She gives hygiene talks in the schools, and visits the homes. "We have found the work of the school nurse thoroughly satisfactory in giving the town what seems adequate inspection and control of contagious disease."

The neighboring town of Norwood adopted same system; Milton, planning the same.

WELLESLEY.

CANAVAN, Myrtelle M. Medical data of the examination of 2,333 supposedly normal adult young women. *In* American school hygiene association. Proceedings, 1912. Springfield [Mass.] American physical education review, 1912. p. 76–91. tables. record blanks.

The physical examination system of Wellesley college; data covering examinations from 1906 to 1911; average age of students, 19 years.

Percentages of orthopedic defects.

	Per cent.
1. Back, curvature	35
2. Shoulders, uneven	53
3. Hips, uneven	43½
4. Legs:	
(*a*) Knock-kneed	21
(*b*) Bow-leg	8½
(*c*) Unequal	¾
5. Ankles pronated	70½
6. Longitudinal arches:	
(*a*) Flat	12
(*b*) High	5
7. Anterior arches, flat	11½
8. Toe joints enlarged	3½
Deaf or partly so	2½
Nose, hypertrophy of turbinate	13
Tonsils enlarged	28½

While 17½ per cent had had throat operations, and 15 per cent of these, for removal of tonsils or adenoids, tonsils were found enlarged in 28 per cent.

	Per cent.
Eye lesions	12½
Glasses worn	37
Nutrition poor	19
Teeth:	
(*a*) Missing	12½
(*b*) Cavities	4
(*c*) Poor or irregular	1
Menstrual disorders	23
Enlarged lymph nodes	12
Heart lesions:	
(*a*) Organic	3
(*b*) Murmurs, no symptoms	17½
(*c*) Other lesions	8
Sports:	
(*a*) Qualified	56
(*b*) Disqualified	3

Unusual lesions for the most part are stigmata of degeneration, 24 different sorts.

WORCESTER.

EMERY, George E. Medical inspection in two Worcester schools. Pedagogical seminary, 17: 111–18, March 1910. tables.

"Fifteen inspectors were appointed in Worcester by the board of health and began work in October, 1906.

"Our duties were to inspect such children as were referred to us by the teachers, and make weekly reports of such inspection.

"October of this year [1909] blanks were furnished by the board . . . and a systematic inspection of all the pupils was begun The tests for sight and hearing are conducted by the teachers, but . . . they are by no means complete and many of the record cards show normal vision when serious defects are really present. . . . There is no test card for astigmatism. . . .

"In the fifth grade only 34 per cent had enlarged glands. . . . In the sixth grade 80 per cent . . . and for the whole school 55 per cent. . . . The general nutrition of the pupils is . . . 63 per cent good, 32 per cent medium and only 4 per cent poor. . . .

"I was not surprised that a large number should have poor teeth; but I was surprised that the average number per pupil should be so high; that is eight in the first grade and nearly four in the ninth grade. . . .

"The school nurse should be the link between the school and the home, but in Worcester that link is missing. . . . The district nurses do help but . . . can give but little time to this work."

MICHIGAN.

Grand Rapids. Board of health and Poor commissioners. Report of School examiner. *In their* Annual reports, year ending March 31, 1911. tables.

Inspection for physical defects was ordered discontinued by the board of health, on December 6, 1910, and inspection is now made for contagious diseases only.

The following is a report of work from May 1, 1910 to April 1, 1911:

Contagious diseases discovered.

Itch	7
Whooping cough	22
Measles	418
Typhoid fever	1
Scarlet fever	17
German measles	52
Mumps	28
Chickenpox	23
Smallpox	2
Total	570

Physical defects discovered (May 1, 1910, to December 1, 1910.)

Glandular	1
Nervous	2
Stomach	1
Hernia	1
Defective teeth	11
Deformities	1
Hypertrophied tonsils	45
Ear trouble	1
Adenoids	3
Skin trouble	4
Total	70

The total number vaccinated was 245. The acting school examiner is Leland H. Gilleland.

KIEFER, Guy L. Medical inspection of school children. Dental summary, 31: 264–68, April 1911.

In Detroit, 50,501 children were examined by the medical school inspectors; 3,499 excluded for contagious diseases; 818 cases of tonsilitis; 12, of scarlet fever. Physical defects were found in 2,118 pupils: Of these 598 had defective eyesight; 204, diseased eyes; 136, defective hearing; 906, enlarged tonsils or adenoids, or both, and 210 had defective teeth.

Beginning October 23, 1909, to May 7, 1910, the Detroit district dental society, in its free dental clinic, attended to 234 children.

MARTINDALE, W. C. How Detroit cares for her backward children. Psychological clinic, 6: 125–30, October 15, 1912.

"In the fall of 1910 the department of special education was organized and the nine special rooms, the school for cripples and schools for stammerers, were placed under the direct supervision of the general supervisor."

Binet-Simon tests are used to determine the mentality. If no results follow notification to parents the school principal calls upon the regular school physician to make a physical examination of the child, to ascertain if the backwardness be due to defective vision, defective hearing, adenoids, enlarged tonsils, or nervousness. The principal reports result to parents; if parents are unable to provide the needed medical attention, the principal reports the case to the child study committee; upon note from the secretary of the committee, Detroit's best specialists give free assistance to the children. Where children can not afford spectacles, they are provided through fund set aside by the Detroit teachers' association.

Since September, 1911, 215 pupils have been tested for defective vision and provided with glasses.

After the child's physical defects have been remedied, if his mental condition still remains unchanged, the Binet examiner, appointed by the board of education, then visits the school and gives him the Binet test. The special physician, appointed by the board of health to work under the direction of the board of education, visits the school and makes a physical examination of the child. "The statement of the parent as given in the report sent to the secretary of the child study committee by the principal, together with the child's school history, reports of the Binet examiner and of the school physician are then passed upon by the child study committee.

"In the cases of low grade children whom the committee thinks it advisable to exclude, a second examination is made . . . by one of the mental specialists of the child study committee consultation staff . . . and usually results in the exclusion of the child. . . . Since September, 1911, 488 cases have been examined. The committee recommended 190 of this number to the special rooms."

MAY, George A. The result of one thousand nose and throat examinations. American physical education review, 14: 636–44, December 1909.

Examinations made at the Waterman gymnasium, University of Michigan.

There were found in 1,000 students, mostly freshmen, 157 deviated septa; nasal spurs and ridges, 398; adenoids large, 36, moderate, 145; chronic tonsilitis, 4; lacunar, 8; chronic tonsillar inflammation with hypertrophy, 191 cases; symptoms of frequent nasal bleeding, 170; 85 without accountable etiology; simple chronic rhinitis, 54 cases; atrophic rhinitis, 12; larynx, acute inflammatory conditions, 105. Eighty-three complained of more or less chronic hoarseness. There were 38 hay fever cases. Seventy-six gave a history of some nose and throat operation.

The main object of the paper is to point out the necessity of an examination of this character. The ideal time for such would be the childhood period.

WARTHIN, Aldred Scott. Thy physical health of the University. Michigan alumnus, 16: 70–73, November 1909.

The University of Michigan.

"At the beginning of the present college year the department of medicine and surgery adopted methods tending towards a better physical knowledge of the medical students particularly with reference to the occurrence of tuberculosis. Each medical student is to report once a semester to the department of internal medicine for an examination. . . . The need for such systematic examinations has been strikingly shown in the medical department. For the last four or five years 3 to 6 cases of tuberculosis have been discovered annually in the junior and senior medical classes—about 4 per cent of the class on an average. . . . Very few cases are discovered in the freshman or sophomore years. . . .

"Out of 200 women examined [in the gymnasium] the examiner discovered 8 suspicious cases, 6 of which gave positive evidence of incipient tuberculosis."

MINNESOTA.

MINNEAPOLIS.

Minneapolis. Board of education. Report of the Supervisor of hygiene and physical training. *In its* Annual report, year ending June 30, 1911. p. 89–94 (98)

Signed: Charles H. Keene, M. D.

January 1, 1911, a system of medical inspection was inaugurated, conducted by seven physicians and seven nurses. During the five months medical inspection has been in operation, 19,082 inspections made, 7,102 being physical examinations. Of these, 72 per cent were found defective; most common defect, hypertrophied tonsil, 35 per cent of those examined having this defect; 32 per cent, defective teeth; 28 per cent, adenoids; 24 per cent, enlarged glands; 18 per cent, defective vision; 11½ per cent of anemia; 6½ per cent, malnutrition; 3,873 cases have been treated, "who would not otherwise have received treatment."

ST. PAUL.

MEYERDING, E. A. School health. St. Paul medical journal, 14: 246–55, May 1912.

General summary. Medical inspection in St. Paul, p. 248–250, 253. Page 253 contrasts conditions between two schools; one among a foreign-born and laboring-class population and the other "one of the best from a social standpoint."

	Hill school (good social class).	Harrison school (labor class).
	Per cent.	*Per cent.*
Requiring dental attention	40	82
Malnutrition	[1] 9	20
Uncleanliness	2	10
Skin disease	[1] 1	5

[1] Less than.

St. Paul. Board of school inspectors. Medical inspection. *In its* Annual reports, school years ending June 9, 1909, and June 10, 1910. p. 57–59. illus.

Department of medical inspection established along lines outlined by the superintendent of schools. One physician employed to give three hours each day from 9 to 12 to the schools and to maintain office hours from 9 to 12 on Saturdays at the school board rooms. He began his work with one nurse assistant and later three nurses were assigned. Medical inspection entirely under the school authorities' supervision. "Our experience strengthens the conviction that it should always be so. . . .

"The medical inspector shall make recommendations on matters affecting the physical environment of children such as the building lot, the drainage, heating, plumbing, ventilating, water supply, drinking facilities, sweeping, scrubbing, use of disinfectants, deodorizing, fumigating, etc.

"He shall go from building to building and shall make systematic examination of all pupils in the elementary schools reported to him by teachers and principals and such other pupils as may appear to him physically defective.

"He shall be accompanied and assisted in all his work by a school nurse who shall record all findings, and report to parents. The medical inspector shall not be permitted to give any treatment to children except temporary assistance, or in cases of emergency. . . . The medical inspector shall also send notice to the parents or guardians of pupils lacking in cleanliness or needing treatment; he shall be authorized to exclude pupils. . . .

"He shall give such instructions to principals and teachers as will make them familiar with the more conspicuous symptoms of physical and mental deficiency, to the end that they may suggest only those who are really abnormal to the inspector for examination. He shall give instruction to teachers, respecting vision and hearing tests, and on such matters relating to the physical inspection of children as will promise the assistance and cooperation of teachers and principals in the work of his department."

During the school year 1909–10, a systematic examination of 3,265 found 2,088 behind grade; 28 per cent of them backward in studies because of physical conditions

The following is a summary of the work of two nurses:

	Total.
Rooms inspected	343
Contagious diseases discovered	170
Communicable diseases (not contagious)	243
Surgical dressings and treatments	182
Pediculosis	669
(Cured, 442.)	
Taken to dispensary or doctor	482
Defective vision, attention received	203
Defective vision, glasses secured	144
Defective nose and throat, attention received	270
Defective nose and throat, operated upon	103
Malnutrition	118
Enlarged cervical glands	25
Pulmonary diseases, attention received	9
Tubercular diseases, attention received	8
Heart disease, attention received	20
Teeth, use of brush taught	2,000
Teeth, attention received	220

MISSOURI.

St. Louis. Board of education. Department of school hygiene. *In its* Annual report, 1909. p. 176–88.

History of the St. Louis department of school hygiene. Work to begin opening of school year, September, 1909.

The supervisor of hygiene is required to be a skilled physician. He must devote his entire time to the work of the department. The inspectors must be graduates of medical colleges of recognized standing, and devote themselves to this work for ten months in each year. They must during all school hours be engaged in their investigations in the school buildings, and during the school term use such further time as shall be required for making the necessary examinations and reports. Supervisor and inspectors must not treat any case of physical defect or disease that has been discovered by them while engaged in the work of the department. The work must be conducted under such further regulations as may be prescribed by the superintendent of instruction with the approval of the board of education. Bacteriological laboratory to be opened in board of education, or in some school building, and to be equipped with necessary instruments and supplies.

St. Louis. Board of education. Department of school hygiene. *In its* Annual report, 1910. p. 199–213; 314–16. tables.

The school year of 1909–10 saw the first actual work of the department of hygiene. A supervisor and five inspectors were authorized by the board of education on February 9, 1909.

"When the inspector arrives at a school, he at once notifies the principal, who, in turn, through a monitor, informs the teachers that the inspector has arrived and he is ready to care for reported cases.

"The teacher having previously filled out the teacher's diagnosis card, Form 11–C [form follows], sends the child with this card to the inspector. The inspector makes his examination and enters his diagnosis on this card and fills out, in duplicate, Form 11–A [form follows]. He instructs the child to deliver the card . . . to the parent or guardian.

"If a child is found to be suffering from a contagious or infectious disease, he is at once excluded and the city health department is notified on the form . . . [form follows]. This terminates the relation of the department of hygiene with the child until he or she is ready to reenter school, at which time the health department notifies us . . . that quarantine restrictions have been raised. The child is reexamined by the inspector of hygiene. . . .

"In case of . . . physical defect, the diagnosis card [Form 11–C] is set back a certain number of days in a follow-up file and at that time the pupil is reexamined and his condition . . . entered upon the card.

"The cases of noncommunicable disease are handled in the same manner as the cases of physical defects except where . . . a menace to the other children. The pupil suffering from such a disease is excluded until, in the opinion of the inspector, he may properly return to school."

Each school in the city has an emergency surgical chest. For absence of three days, the teacher reports to the inspector of hygiene for her school; he tabulates all the reports from the same school and reports them to the health department, filing a duplicate with department of hygiene. On receipt, the health department district inspectors visit the homes of children so reported and report back, to the principal and inspector, the cause of the child's absence; the case is followed up by the attendance department, if the cause is other than illness. The health department makes a daily report to the department of hygiene of all contagious diseases reported to it. During the summer of 1909 a record of all such cases was kept by the supervisor of hygiene, and a letter was sent to the infected homes and to the principal of the school in the district in which these homes were located, requiring the children to be examined by the assistant health commissioner, or by the department of hygiene, before admission to school. Principals were directed to refuse admission unless the child brings a certificate from one of the two examining officers. The inspector makes thorough examination of all suspected contact cases for contagious diseases and these are under daily inspection. All children are examined in a school where scarlet fever has been found, the case is at once excluded, health department and the building commissioner are notified, and fumigation is made after school dismissal (p. 205–209).

See also Report, 1911, p. 141–150 (Regulations and work of the six school nurses added to the department of school hygiene, and cards).

NEW JERSEY.

HOLMES, George J. Educational hygiene and prophylaxis. New Jersey. Journal of the medical society, 9: 223–31, October 1912.

Newark requires the medical inspector "to devote two hours each day, the hours of service to be at the convenience of the school authorities."

Cost to run the department of medical inspection in 1909–10 was 31 cents per pupil; in 1910–11, 41 cents per capita. The increased cost was justified by results: Forty thousand fewer days were lost by quarantine in 1910–11 than in the previous year, and a decrease of 50 per cent in the number of buildings in the city quarantined in 1910–11 than in 1909–10; in 1910–11 there were 35,659 more inspections

made by the department, with 843 fewer exclusions, and the 15,625 more physical examinations show a gain in amount of work and character of same.

"During 1910–11, 24,310 physical examinations were performed—61½ per cent of this number were found to have one or more defects and 38½ per cent were found normal.

"Chief among the defects are:

	Per cent.
Enlarged glands	2
Defective vision	20
Defective hearing	2
Defective nasal breathing	7
Defective teeth	47
Enlarged tonsils	30
Adenoids	12
Mentality (percentage based on number found defective)	2

"Were I asked to establish medical inspection in a city . . . I would employ first of all, sufficient trained nurses to carry on the major part of the work. The only part of medical inspection that cannot be conducted by nurses trained in school work is the examination of the heart and lungs. . . .

"I would have these nurses under the direction of a trained physician who should be expected to devote the entire day, from 9 to 5, to school work. Medical inspection should not be carried on in public schools as a necessary evil, but as an indispensable benefit."

LAMSON, William J. The medical inspection of schools. Medical society of New Jersey. Journal, 7: 569–72, April 1911. tables. form.

Duties of a medical inspector, as adopted by the New Jersey State board of education, October 5, 1909, are as follows:

"1. He shall use the same skill in examining pupils as he would in the case of private patients.

"2. He shall arrange his visits to the school to suit the convenience of the school authorities and his own private work. He shall respond to emergency calls as quickly as possible.

"3. He shall make regular inspections: (*a*) In rural districts at each school at least twice a month; (*b*) in villages and small towns at least once a week; (*c*) in towns and cities at least three times a week, and in crowded cities daily.

"4. At the commencement of each school year he shall make a thorough physical examination of each pupil, and record his findings on cards assigned for this purpose: (*a*) Eyes, for farsightedness or nearsightedness, color blindness, squint and roughly for astigmatism, also the condition of the eyelids; (*b*) ears, for acuteness of hearing, adenoids, discharge; (*c*) throat, for enlarged tonsils, adenoids, nasal deformities or discharges; (*d*) teeth, condition and care; (*e*) deformities, spine, limbs, etc.; (*f*) skin, eruption, condition of scalp; (*g*) when practicable measurements, height, weight and chest measures; examination of heart and lungs.

"5. He shall exclude cases of contagious diseases, and send a written statement of conditions found.

"6. He shall from time to time examine into the sanitary conditions of all schools in his district.

"7. Any special work, such as frequent extra visits, vaccination or fumigation, shall be arranged for by mutual agreement between the board of education and the inspector."

MACDONALD, Joseph, *jr.* The object and intent of medical inspection of school children. New Jersey. Journal of the medical society, 9: 231–34, October 1912.

To be accomplished—

"First. By the appointment of a State medical school inspector as a member of the State board of education.

"Second. By the preparation of uniform blanks by the State board covering individual record cards for yearly examination; recommendation cards for treatment and exclusion cards for infectious or communicable diseases.

"Third. By requiring that duplicate reports shall be sent by the school inspectors to the school boards they are serving, and to the State board at Trenton; thus with other essential details . . . a most important department could be built up that would prove not only a great saving in expense to the community, now expended in carrying along physically deficient pupils, but would give us a stronger race of men and women physically and mentally."

Newark. Board of education. Report of Supervisor of medical inspection. *In its* Annual report, year ending June 30, 1911. p. 211–21. tables.

Comparative table of medical inspection in Newark public schools from 1901 to 1911, inclusive, p. 212.

	Total examined.	Physical examination.
1901	5,585	.....
1902	9,819	.....
1903	6,803	.....
1904	8,529	.....
1905	8,076	.....
1906	43,546	.....
1907	21,299	.....
1908	37,937	.....
1909	58,367	4,582
1910	172,550	9,045
1911	208,209	24,670

	1909–10	1910–11
Defective vision	1,380	3,003
Defective hearing	359	396
Defective teeth	2,255	7,124
Hypertrophied tonsils	1,869	4,588
Post nasal growth	596	1,866
Mentality	166	339
Total defective	5,903	14,954

Paterson. Board of education. Report of the Visiting nurse. *In its* Annual report, year ending June 30, 1910. p. 72–73. tables.

Inspection of School no. 4: Inspection begun of each child in the first fifteen classes of this school, April 12, 1910. Total number examined, 579.

Defective teeth treated ..... None.

(72 per cent had defective teeth.)

Pediculosis	210
Hypertrophied tonsils	45
Minor skin diseases	25
Defective nasal breathing	23
Defective vision	16
Trachoma	3
Defective hearing	13
Bad nutrition	7

REBER, C. E. Abnormal school children. School exchange, 3: 25–29, October 1908. tables.

A statistical résumé of examinations, 1908, made on various types of school children, both normal and feeble-minded. Discusses chiefly the retarding effects of adenoids upon body-growth, spine, vocal organs, teeth, palate, and mentality—"feeble-mindedness is more likely to be the effect of adenoids, and the causes that bring them about than that adenoids are the effect of feeble-mindedness. . . . Adenoids are a defect of civilization."

Trenton. Board of education. Medical inspection. *In its* Report, year ending August 31, 1909. p. 45–47.

Begun, January 1909. Six physicians and a school nurse appointed. Each pupil made the subject of a thorough yearly examination. A sanitary inspection of the school buildings, classrooms, grounds once each month.

Reports for six months give the number of examined as 6,346; called to inspect different cases, 3,000.

Examined by teachers.

		Defective.
Vision	3,132	1,352
Hearing	1,482	152

	Examined by inspectors.	Defective.
Heart	5,664	92
Lungs	5,676	80
Throat	5,345	853
Naso-pharynx	5,337	677
Nasal-septum	5,347	204
Teeth	6,346	2,174
Adenoids		229
Enlarged tonsils		916
Anemic		63
Debility		100
Catarrh		100
Eczema		41
Impetigo		63
Conjunctivitis		55
Strabismus		29

NEW YORK.

BAKER, Sara Josephine. Medical inspection and examination of school children. . . *In her* The Division of child hygiene of the Department of health of the city of New York. p. 61–93. illus. charts. tables. (City of New York. Department of health. Monograph series, no. 4, September 1912)

Vaccination of school children, p. 89–93:

"The conditions revealed as a result of these physical examinations were of sufficient importance to attract the attention of the health authorities to the necessity of more complete control of the health of the child during its school life. The postal card notifications resulted in obtaining medical care for only about 6 per cent of the physically defective children. It may readily be seen that, while such a system has value in definitely determining the physical condition of the children in the schools, the records soon amount to little more than the mere compiling of statistical data unless some definite and systematized effort be made to see that the children obtain proper medical care.

"It was the recognition of this fact that instigated the studies which resulted in the organization of the division of child hygiene. With its formation, and the appointment of a largely increased staff of trained nurses, it became possible to have the nurses visit the physically defective children in their homes in order to induce parents to provide proper treatment. This system of home visits by the nurses was inaugurated on September 15, 1908. As a result of their efforts, during 1909 83 per cent of the physically defective children obtained treatment, as opposed to the 6 per cent under the former system. The entire system as outlined was carried on with excellent results until January 1, 1912.

"Previous to this time it was recognized that, with a visit to each school each day by a medical inspector and a nurse, there was a certain duplication of time spent which might be eliminated with resulting financial economy. Experiments were carried on in two groups of schools during a period of three months in the spring of 1911 to determine the relative economy and efficiency of placing the control of contagious diseases in the schools in the hands of the school nurse, leaving the medical inspector free to devote his entire time in the schools to making physical examinations of the children. The experimental study having shown that such a system was feasible, it was inaugurated on January 1, 1912.

"The complete system of school medical inspection is carried on in 517 public schools with a registered attendance of 684,207 pupils. In addition, 151 other free schools of the city receive a more or less complete series of inspections for the purpose of detecting contagious diseases. Seventy-four medical inspectors and 179 nurses are detailed to the work of school medical inspection under the immediate supervision of the staff of supervising inspectors and supervising nurses in each borough. Each inspector is assigned to duty in a group of schools with an average registration of 9,000 pupils. Each nurse is assigned to duty in a group of schools with an average registration of 4,000 pupils.

"Each public school in the city is visited each day by a nurse, except in certain outlying and sparsely populated districts where visits are made at less frequent intervals. Other free schools are visited upon request, or regularly once or twice weekly.

"*Routine inspection.*—1. At the beginning of each term each medical inspector makes a routine classroom inspection of each child in the schools under his charge.

"Thereafter the nurse makes a continuous routine class inspection of each child in the schools under her charge, following the same procedure.

"2. All cases of disease found are recorded on a special class index card, with the data in appropriate columns. A card or cards is made out for classroom, and the index kept in an accessible place in each school. Further data regarding each case is recorded on this class index card. Code numbers are used to indicate the kind of disease.

"3. All contagious diseases found are dealt with as described under the heading 'Morning inspection.'

"4. When a child is found to be affected with a marked form of physical defect, the particular defect is noted and the child referred to the medical inspector for a physical examination.

"5. All children ordered under treatment are referred to the school nurse and are thereafter controlled as described under the heading 'Morning inspection.'

"*Emergency cases.*—In the absence of the inspector all emergency cases are treated by the nurse in the school whenever other treatment is not available. Such cases are thereafter referred to the parents for future care.

"THE DIAGNOSIS AND CORRECTION OF NON-CONTAGIOUS UNTREATED PHYSICAL DEFECTS.

"1. The medical inspector visits each school under his jurisdiction for two successive days. A regular schedule is maintained, and the principals of the schools are thus informed of the dates of the inspector's visits. The principals are requested to instruct the children to report, in small squads, to the inspector for physical examination.

"2. Examinations are made in the following order: First. Children entering school for the first time; Second. Children especially referred by the principals or teachers; Third. Children belonging to the class to be graduated; Fourth. In the regular course, beginning with children of the lowest grades, and proceeding to the higher grades in regular order; Fifth. Classes of the same grade are examined in regular order in each school of the group.

"3. Each child is thoroughly examined for the following conditions: Defective vision, defective hearing, defective nasal breathing, hypertrophied tonsils, tuberculous lymph nodes, defective teeth, malnutrition, pulmonary disease, cardiac disease, chorea, orthopedic defects.

"4. A complete record of each physical examination is made on a special form. If a child is normal, the inspector sends such a report to the borough office of the division. If abnormalities are found, the record form is given to the school nurse.

"A duplicate record of each child's condition is also placed on file with the child's school record, thus affording to the educational authorities the fullest information in regard to the child's physical condition, and enabling them to take advantage of this information in adjusting the individual curriculum.

"The nature and results of the treatment obtained for each defect are thereafter noted upon this school record form by the nurse.

"5. Each defective child is given a copy of an appropriate form, properly filled out, to take home to its parents.

"6. If at the end of three days no notice has been received from the parents that the child is under medical care, and if the child shows no evidence of such care, a notice is signed by the principal and sent to the parents.

"7. If the parent calls at the school, as suggested, the inspector or nurse explains the nature of the defect and the need of treatment; if the parents do not respond within three days, the nurse visits the home and explains to the parent the character of the defect, the need of treatment and the beneficial results that may reasonably be expected to result from medical care. Repeated home visits are made by the nurse until treatment is provided or an absolute refusal is encountered.

"8. When parents are willing to have their children treated but are unable to pay a private physician and by reason of home duties or occupation cannot spare the necessary time to obtain treatment, the nurse takes the child to a dispensary, after the parent has signed a request to that effect.

"9. When treatment is obtained or refusal is met, the nurse records on the regular physical examination form and the school record form the character of the treatment. The first form is mailed to the borough office of the division, the second remains on file in the school.

"10. After the child has obtained treatment, it is again examined by the inspector, who records the improvement or non-improvement on the school record form and on the special form forwarded to the borough office of the division.

"Every effort is made primarily to refer those children who require treatment to the private family physician. If there is no private family physician and if, furthermore, the family is unable or unwilling to employ a private physician, the child is then referred to a dispensary or hospital for treatment.

"Inspectors and nurses are required to consult with the school authorities regarding the matters pertaining to school environment or the curricula which may have a bearing upon the health of the child.

"There are in the city of New York only 19 free dental clinics. Of these, only one is maintained wholly for the treatment of school children. This clinic is supported by a group of philanthropic citizens. The remainder of the clinics are connected with dental colleges or dispensaries, and provide treatment for adults as well as children. Only a few of these clinics fill teeth, and extraction is done in the majority of the cases of children who are able to obtain treatment. . . .

"The need of free dental clinics is acute, and the department of health has asked the board of estimate to include in the departmental budget for 1913 an appropriation sufficient to employ 15 dentists and 8 nurses to allow the establishment of school dental clinics under the supervision of the division of child hygiene.

"*Clinics for School Children.*—It has been felt by the department that the test of the value of the system of school medical inspection was the character and results of the treatment obtained by the children. In order that the existing need for more facilities for treating the children might be met, and that the character of treatment given and the adequacy of results might be under control, the department has obtained in its budget for 1912 funds for the establishment of six clinics under the supervision of the division of child hygiene, exclusively for the treatment of school children. Statistical data of these clinics can not yet be given, owing to the short time they have been in operation.

"The location of the clinics is as follows: *Borough of Manhattan*—341 Pleasant Avenue; Gouverneur Slip. *Borough of Brooklyn*—330 Throop Avenue; 1249 Herkimer Street; 124 Lawrence Street. *Borough of the Bronx*—580 East One hundred and sixty-ninth Street.

"These clinics are open from 2 to 5 p. m. on school days, and from 9 to 12 a. m. on Saturdays. Each clinic has the following service: (1) Eye diseases: (*a*) Contagious eye diseases; (*b*) refraction. (2) Nose and throat diseases. (3) General medical diseases. (4) Skin diseases.

"The service at 341 Pleasant Avenue includes hospital wards of 14 beds and facilities for operations on trachoma, adenoids, and hypertrophied tonsils. Similar hospital service will shortly be ready at 330 Throop Avenue, 1249 Herkimer Street, and 580 East One hundred and sixty-ninth Street.

"The children are referred by the school nurse directly to the clinic, a special form of reference card being used. After the child reports at the clinic, the nurse assigned to duty at the clinic follows up the case, making home visits whenever necessary to see that the child remains under treatment until discharged."

BAKER, Sarah Josephine. The value of the municipal control of child hygiene. American journal of obstetrics and diseases of women and children, 65:1061–68, June 1912.

"In New York City since 1908, 727,750 children in the public schools have received a complete physical examination. . . . An average of 40 per cent were found to have one or more associated physical defects . . . with or without the most common defect that we find, namely, defective teeth. Thirty-five per cent of the remainder . . . were found to have defective teeth as the only physical defect. . . . In the schools alone the efforts of the division of child hygiene have resulted in an immense gain in school time for those children who were affected with contagious eye and skin diseases, the necessary exclusions; . . . for these reasons being reduced from over 57,000 in 1903 to slightly over 3,000 in 1911. . . .

"It has been alleged that the assumption by the city of the responsibility for the health of school children has made serious inroads upon the practice and income of private physicians. In order to ascertain the exact conditions . . . I have had tabulated for . . . 1911 the various sources from which children have received treatment. During that year, of the 65,150 children, 37,986, or 58 per cent, were treated by private physicians or dentists, while the remainder 27,164, or 42 per cent, were under the care of hospitals and dispensaries. . . .

"This work in the schools, with its control of the contagious disease situation, with the elimination of the school as the main focus of infection; the physical examination of each child as soon as it enters school, before it is allowed to graduate and as nearly as possible every two years in the interim; the instruction of the parents . . . and the follow-up work . . . was performed during 1911 at a per capita cost of $0.43."

BLAN, Louis B. Are we taking proper care of the health of our school children? Pedagogical seminary, 19:220–27, June 1912. tables. chart.

Writer records visit made in company with a school physician on a routine round in New York City.

"In one school, attended by 2,000 pupils, the visiting physician waited patiently for a report of sickness from the various classes. There was not one report of illness or a single case for medical investigation. This seems almost incredible. If this number of children had been previously examined surely some of them would need medical attention. . . . In another school . . . not one case of cardiac ailment was reported. In point of fact . . . two of these children had heart disease.

"In one case . . . 'pulmonary trouble' was registered on the health card but no medical attention . . . had been given. The case had been recorded three weeks prior. . . .

"In none of the schools of New York City has there ever been recorded a complete general history of the child.

"Bronchitis cases are never examined or attended. . . .

"There is not time enough to make adequate physical examinations. Each physician covers the ground assigned . . . in less than three hours and is paid little for the work he is doing.

"No complete physical examination of the entering or enrolled elementary school pupils to ascertain the health conditions of their vital organs has as yet been suggested.

"Actual number of deaths among New York City school children between ages 5–15, during year 1910–11 (*in part only tabulated*):

	Male.	Female.	Per cent of total deaths.	
			Male.	Female.
Tubercular disease (pulmonary)	132	203	9.1	14.5
Cancer	6	8	.....	.....
Nervous (sense organs)	88	75	6.1	5.4
Circulatory (heart)	127	195	8.8	13.9
Respiratory	144	169	10.0	12.1
Digestive (intestines, stomach, etc.)	118	104	8.2	7.4

"This pitiful list of victims . . . demands serious and immediate attention. All entering pupils should be required to present certificates of medical examination as to the general and specific organic condition of their health, or else be compelled to undergo such examination before they are admitted to school."

In an emphasizing paragraph to this report, Dr. Luther Halsey Gulick says: "In general the medical inspection of school children in the United States is not having adequate results. A rather wide observation indicates that not one-quarter of the children who need medical attention get it. In most of the cases examinations are made and the diagnosis recorded on a card and filed away for future reference, but nothing actually happens to the child as a result of the examination." The writer sets forth a number of causes for this trouble In the first place the doctors are young and inexperienced. "In practically all cases, medical inspection is a doctor's secondary interest. . . . He has no intention of finding a career in medical inspection of school children. . . . The salaries . . . are absurdly small; the mean salary being about $300 per annum. . . .

"The work demanded of a medical examiner . . . is not the work for a beginner in medicine. It is the work of a highly trained, long experienced specialist. . . . There are not enough doctors to give either adequate or sufficiently frequent examinations. . . . There are not enough nurses to see to it that the prescriptions of the doctors are carried out. Without school nurses, medical inspection is of relatively little value."

New York academy of medicine. A Report upon the health conditions in the public schools of New York City. By the Committee on Public health, hospitals and budget of the New York academy of medicine. Medical record, 82:406–12, August 31, 1912. tables.

Executive-secretary, E. H. Lewinski-Corwin.

Reprinted.

Study made: "1. To summarize the present methods of safeguarding the health of school children. . . . 2. To analyze these methods and their results from a strictly medical point of view. 3. To enlist the interest and cooperation of the medical profession as a whole in the problem of school hygiene. 4. To give medical advice and assistance to the Departments of health and education in their efforts to solve these problems. 5. To support the reasonable demands of these departments for sufficient city funds to maintain proper health conditions in the public schools."

Physical examination for noncontagious defects.

Number examined:

1911	230,243
1910	266,426
1909	231,081

	1911		1910		1909[1]	
	Found defective.	Per cent.	Found defective.	Per cent.	Found defective.	Per cent.
Needing treatment	166,368	72.2	196,664	73.8	172,112	74.4
Found with defects other than teeth alone	75,857	32.9	101,602	38.1	102,150	44.2
With defects of teeth as only defect	90,511	39.3	95,062	35.6	69,962	30.2
With defective vision	24,514	10.6	29,634	11.1	30,408	13.1
With defective hearing	1,491	.6	1,519	.5	2,340	1.0
With defective nasal breathing	27,316	11.8	40,946	15.3	43,393	18.7
With hypertrophied tonsils	34,639	15.0	50,012	18.7	50,934	22.0
With defective nutrition	5,845	2.5	8,691	3.2	7,249	3.1
With pulmonary disease	483	.2	656	.2	744	.3
With cardiac disease	1,661	.7	2,370	.8	1,503	.6
With orthopedic defects	1,190	.5	1,683	.5	1,461	.6
With chorea	861	.3	951	.6	940	.4
With defective teeth	135,843	58.1	164,250	61.6	131,747	57.0
With defective palate	85	.....	153	.....	324	.1
With tuberculous lymph nodes	418	.2	759	.2	810	.3
Reported treated [2]	65,150	86.0	64,861	64.0	84,968	83.0

[1] Monthly bulletin of the department of health for April, 1912, p. 101.

[2] These figures do not include children reported with defective teeth as the only defect, whose treatment consisted only of instruction in oral hygiene.

Communicable diseases of the eyes and skin.

Year.	Trachoma.	Conjunctivitis.	Ringworm.	Impetigo.	Scabies.	Favus.	Pediculosis.	Molluscum contagiosum.	Miscellaneous.	Total.
1909	45,615	49,807	7,788	12,516	4,006	409	151,585	154	14,621	286,591
1910	20,888	26,855	9,052	2,251	.....	290	153,797	143	41,660	263,828
1911	15,245	25,941	4,083	7,713	1,768	220	152,045	96	11,660	248,771

Attention is called by the committee to the elements of the health conditions in public schools. The health work in the schools consists in: (1) Medical examination of school children for contagious and noncontagious defects. (2) The elimination of children found suffering from contagious diseases. (3) Calling of parents' attention to the defects of their children. (4) Direction of children to physicians and dispensaries. (5) Following the children up to see whether they received treatment. (6) Treatment in schools. (7) Instruction in personal hygiene. (8) Physical training instruction. (9) Segregation of backward and mentally defective children. (10) Sanitary care of schools.

The cost of inspection for the detection of contagious diseases amounted to $0.57 per 1,000 children inspected; the cost of each physical examination amounted, on an average, to $0.097, and the cost of the home visits of the nurses averaged as high as $0.60 for each case.

School work, 1912.

76 medical inspectors, at $1,200 per annum	$91,200
172 nurses, at $900 per annum	154,800
6 additional inspectors, i. e., supervisors, at $1,200 per annum	7,200
10 additional nurses, i. e., supervisors, at $900 per annum	9,000
4 medical inspectors (for physical examination of children for employment certificates), at $1,200 per annum	4,800
	267,000

The following is a summary of the reports of four borough chiefs, 15 medical supervisors, and 14 supervising nurses with regard to the present system of medical inspection of school children. The disadvantages of the 1912 system are discussed at length.

"*Morning inspection for contagious diseases.*—The reports are unanimous in disapproving of nurses diagnosing and excluding contagious cases, for the following reasons:

"(1) Their training has not fitted them for it physically or mentally.

"(2) They are overworked and unable, for lack of time, to perform their other duties, especially home visits, which is the essential part of their work. According to the statement of the board of health, based on 300 cards selected at random, the amount of time devoted to home visits last year averaged three hours per nurse per day; this year the average is 43 minutes.

"(3) There is a duplication of work, because the inspectors have to visit each case excluded.

"(4) The nurses exclude many false cases, thereby causing the inspectors to waste much time in making unnecessary visits. . . . In 100 days they excluded 1,595 cases, or 16 cases a day, for 150 schools, and in 1912, 17 cases a day for 150 schools. . . .

"(5) The medical inspector is not able to keep in close touch with the school on account of the infrequency of his visits, so the 'school physician' no longer exists and the nurse can not take his place. Principals and parents naturally do not have the same confidence in her judgment that they have in the physician's."

"High Schools.—With regard to medical inspection in high schools the following is a summary of the facts obtained, in answer to a questionnaire sent out to all the high schools of the city, some of which were visited in this connection by the executive secretary of the committee.

"(1) *For contagious diseases.*—Of the 11 schools reporting medical inspection for contagious diseases, examinations are made by physicians in 5, and by teachers or nurses in the others. In a few instances inspections are made daily and in the others only in suspected cases. Most of the schools keep no records of the number of cases detected. One, however, reports from 25 to 50, and another 31 for last year. A number of schools send the suspected cases home, only 2 reporting that the board of health is notified. On the whole, responsibility is left with the class teachers, who are often indifferent and ignorant in this respect.

"The daily list of contagious sick reported to the board of health is too long for the teachers to go over every morning, and as a rule little attention is paid to it.

"(2) *For vision and hearing.*—Five schools report that examinations take place either by a physician or physical training teachers once a year or once a term. All others report that no examinations are made. Only 3 of the schools reporting examinations keep records, and in them 710 cases were found defective last year. In all of the schools where examinations are made, the pupils are advised to consult a physician, or go to a dispensary. Only three schools require the students to bring from their parents an acknowledgment of the school notice as to their defects.

"(3) *For defects other than those of eye and ear.*—In 7 schools no examinations are made. In 2 only are general examinations made by a physician. In others they are made by physical training teachers. In one school the examination applies to candidates for athletics only. In the 12 schools report-

ing examinations, some inspect the students once or twice a year, some once during the school course. One school reports that examinations are made for teeth; another (Wadleigh), where a physician is employed permanently, inspects for teeth, glands, nose, throat, heart, lungs, back, skin, nervous disorders, digestion, and nutrition. Other schools do not specify the kind of examinations made. No special rooms for examinations, outside of the offices of the physical training teachers, are provided. Records are kept in all but one school. Six schools notify the parents of the defects and advise them to have the children treated by physicians and dispensaries. Seven schools give corrective gymnastic exercises.

"The number of remediable defective cases found last year was 764 out of a registration of 7,255.

"Only two schools examine for tuberculosis, and three for parasitic skin diseases. Only one school (DeWitt Clinton) keeps a record of what is being done after the defects are pointed out to the students and their parents. This school reports 59 cases of flat foot, 59 cases of scoliosis, 8 cases of hernia, 27 of bad teeth, and 8 miscellaneous ailments rectified.

"NEED OF MEDICAL INSPECTION IN PAROCHIAL AND OTHER FREE SCHOOLS.—There are more than 209 parochial and other free schools existing in this city, which are either entirely out of the pale of the department of health control, or the control is minimized, owing to the lack of funds for carrying on this work. The Catholic parochial schools alone have, according to the statement of the superintendent of the schools, made at one of the conferences on the health condition of children arranged by the committee, a registration of about 130,000. The schools do not have their own physicians, and the health control existing in them is very unsatisfactory.

"SUMMARY.

"The matters pertaining to the health and comfort of the school children are confided partly to the care of the city health department and partly to that of the department of education. The health department does this work through the bureau of child hygiene; the department of education through a number of committees.

"I. *The department of health.*

"1. The work of the child hygiene division is carried on by physicians and nurses. (1) The duties of the physicians.—The physicians make physical examinations, diagnose suspected contagious disease cases excluded from school, make absentee and other home visits. (2) The duties of the nurses.—The nurses exclude suspected contagious disease cases, make class inspections, and do follow up work in the homes.

"2. The present system differs from the original plan in several particulars: (1) The nurses exclude suspected cases daily, instead of the physicians who used to visit the assigned schools every morning for that purpose. (2) The routine class inspections are made by the nurse once a month instead of by the physician once a term as formerly. (3) The physician visits each school for two days in succession, at an average interval of about 10 days, making physical examinations and visiting the excluded and absentee cases, while last year he devoted only the time that was left after the morning inspections to physical examinations in the school last visited.

"3. Advantages of the present system: (1) It has brought about some economy of money. (2) It has markedly increased the total working hours of the staff by substituting nurses working seven hours for physicians working three or four hours daily. (3) It resulted in an increase of physical examinations made by inspectors almost double that of last year. (4) The number of treatments for physical defects received by children has increased, due to the better supervision by the increased corps of nurses. (5) The total number of home visits made by nurses has increased, although the average number of visits per nurse has decreased.

"4. Disadvantages of the present system: (1) The dissatisfaction on the part of some physicians, nurses and school principals with the innovation of having nurses exclude children for contagious diseases. (2) The loss of school work occasioned by unnecessary exclusions due to faulty diagnosis. (3) The duplication of work caused by the inspectors visiting excluded cases at their homes to confirm diagnoses.[1] (4) The infrequent visits of the medical inspector to the school instead of former daily visits. (5) The discontinuance of physicians' consultations with parents. (6) The discontinuance of medical examinations for 'working papers' at the school.[2] (7) The overlooking of cases of tuberculosis by nurses in class inspections. (8) The markedly decreased amount of time devoted to home-visits by nurses. (9) The diminished control of the contagious eye and skin diseases, especially trachoma.

"5. The per cent of New York school children needing treatment for physical defects is over 70, about 40 per cent are found with defects other than teeth, and as large a number suffer from communicable eye and skin diseases.

"6. The proportion of children to one nurse is 3,968, and to one school physician 8,124.

"7. The physical examinations are not thorough. The children's clothing is not removed.

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[1] This is not actually very great, as during the 5 months, Jan.–June, 1911, 16 cases were excluded daily from 150 schools in Manhattan, while in 1912 during the same period the daily average was 17 for 150 schools, or 1 case to every 4 or 5 inspectors.

[2] Five and six entail considerable loss in the efficiency of the system.

"8. There is almost a total lack of free dental facilities for poor children.[1]

"9. The cooperation of parents in following the advice of the physicians is fairly satisfactory.

"10. There is very little cooperation on the part of medical practitioners and dispensaries.

"11. The cooperation of teachers and principals varies greatly, according to the individual school. It is largely a matter of the personal interest of the teachers and principals.

"12. The high schools have almost no medical inspection or supervision for their students.

"13. The parochial and other free schools have no, or very little, medical supervision.

"II. *The department of education.*

"1. The control of the factors affecting the health of school children which are under the care of the department of education are scattered among a number of committees, so that there is no concentration of responsibility, which interferes with efficiency of administration.

"2. The various matters pertaining to the health of the school child for which the department of education is responsible are as follows: (1) The sanitary conditions of the school rooms, i. e., cleanliness, light, ventilation, and temperature. (2) Proper janitor service. (3) The detection of and provision for backward and defective children. (4) Intelligent cooperation on the part of the teachers in the detection and correction of physical or mental defects. (5) Physical training.

"3. With the exception of physical training the control of these factors influencing the health of the child is at present unsatisfactory.

"4. Physical training in the schools and the gymnasium equipment may be considered satisfactory.

"RECOMMENDATIONS.

"1. The present system of medical inspection in the schools by the department of health has not had a fair trial and should be continued for another year at least, before any definite judgment as to its efficacy can be safely reached. Meanwhile the possibility of an arrangement by which the physician, rather than the nurse, could see the suspected cases every day and also have frequent consultations with parents should be seriously considered.

"2. In addition to their present work, the school inspectors should make a routine inspection of every class at the beginning of each term in order that the control of tuberculosis and some contagious eye and skin diseases may be stricter.

"3. The average number of children per nurse and per inspector is too large at the present time. Efforts should be made to make the budget estimates on a basis of school population. In view of the prevalence of physical defects, the average proportion at the present time should be one nurse to every 2,500 children and one physician to every 7,500.

"4. Physical examinations should be made more thorough and more frequent. The children, or at least the boys at first, should be stripped to the waist at physical examinations. The present plan of examining the child when it enters school, when it graduates and once in the interim should be changed. A child should be examined when it enters school and then every two years. The examination just before graduation does not have any particular importance.

"5. In the nurses' work special emphasis should be laid on the follow up work. The burden of clerical work should be lightened. The unnecessary copying of the nurses' and physicians' record on the class card of the child should be eliminated.

"6. The salaries of the nurses should be graded. Instead of their receiving, as a uniform wage, $900 a year, the initial wage should be $800, after a certain period of time increased to $900 and then again to $1,000. The gradation will act as a stimulus to efficient work.

"7. Medical inspection should be instituted in the high schools which are entirely deprived of it at the present time.

"8. The city should appropriate money for the enlargement of the force of the child hygiene department so as to enable them to undertake the inspection of parochial and other free schools.

"9. The medical practitioners and the dispensaries should be impressed with the importance of this work to the community and be urged to cooperate. Provision for dental clinics should be made, this being done if possible through the existing dispensaries.

"10. In the department of education the responsibility for the conditions affecting the health of the school child should be concentrated. An improved organization should be worked out, which would bring under the jurisdiction of one committee the sanitary conditions in schools, the instruction of children in physical training and personal hygiene, the segregation and treatment of backward and mentally defective children, the instruction of teachers in matters of hygiene, mental defects and the commoner diseases in children, and cooperation with the health department which is a condition sine qua non for successful medical work in the schools.

"It is suggested that this might be done by extending the scope of the present division of physical training so as to include in it all of these activities, thus forming a special bureau of school hygiene.

"11. There is an urgent need of a larger corps of physicians in order to extend the facilities for the examination and study of backward children.

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[1] Dr. S. A. Knopf made an investigation of the dental facilities of the dispensaries of New York City for the public health committee of the City club. He found that over 16 dispensaries have dental departments with the average number of dentists in attendance 1-3. In only three dispensaries are special hours for school children arranged so as not to conflict with school hours.

"12. An effort should be made to so modify the present system of employing and supervising janitors of school buildings that the principal of each school should have full authority over and responsibility for the work of the janitor."

New York City. City superintendent of schools. Medical examination of school children. *In his* Annual report, year ending July 31, 1911. p. 154–57. tables.

"Only 287,871, or considerably less than one-half of the total number of pupils in average daily attend ance were examined at all. Of the 299,184 defects found, only 152,941 are reported as remedied.

"As I have frequently pointed out in former reports, the medical service rendered to the department of health is inadequate. The figures given above sustain this assertion. Only about one-fourth of the children in the schools derive substantial benefit from this service. The facts fully warrant me in again recommending that legislation be sought to enable the board of education to organize its own bureau of child hygiene. . . . Physicians employed by your board should be constantly on hand to advise regarding the school training of children suffering from physical defects, particularly nervous disorders and those resulting from malnutrition, and also with regard to the direction which the education even of normal children should take. The advice of a competent physician as to the physical ability of a boy or girl to accomplish any particular line of school work or to undertake the preparation for vocational work . . . would be of incalculable value to parents, pupils, and teachers."

SCHENCK, Herbert Dana. Medical inspection in schools and its status in New York State. North American journal of homoeopathy, 58: 644–51, October 1910.

"Of the 48 cities in the State outside of Greater New York, 31 sent in answers. Buffalo is the only city of the first class. In the second class are 7 cities, Albany, Rochester, Schenectady, Syracuse, Troy, Utica, and Yonkers, all but Syracuse reporting. Albany made so meager a report . . . it cannot be reckoned with, on most questions. Of the other 40 cities having less than 50,000 inhabitants each, comprising cities of the third class, 24 answered the 30 questions sent out by the [American School Hygiene Association] Of these 17 cities reported 383 schools under supervision. . . . Twelve of these cities have an organized system of medical inspection and in 9 the inspection is made for both contagious diseases and physical and hygienic defects, while in 2 others the vision alone is tested. In 2 others, contagious diseases are the only things for which an inspection is made; 12 cities follow up both cases of contagious diseases and of physical defects . . . and 6 more follow up only . . . contagious disease. In 10 cities it is reported that from 80 to 100 per cent are treated by reputable physicians. The inspection does not average more than one visit per week in most cities. . . .

"In 7 cities the parochial and private schools are also inspected for contagious diseases, and in several places for physical defects. . . .

"In four places the inspector is required to visit the houses to find out the cause of absence. . . .

"In 6 cities the books are fumigated once or twice a year. . . . In 14 of the cities the books and other materials of children ill with contagious diseases or in families where there have been contagious diseases are destroyed and in 14 they are disinfected. . . .

"Eight cities provide one or more nurses. . . . In 5 cities they perform the duties of a medical inspector in a limited way. In three cities the teachers are expected to do this. In seven cities a permanent [record of the] physical condition of the child is kept; 15 report none.

"The school authorities in 20 of these cities say that medical inspection has improved the hygienic condition of the schools, the efficiency of the children and the attendance. There are none reporting against it."

Summary:

"1. In no sphere has preventive medicine a better field than in correcting the physical and hygienic defects of school children, which are largely undiscovered until school life begins.

"2. The most economical, comprehensive and complete inspection must include examinations by the teachers, by medical inspectors and by nurses in 'follow up' work.

"3. Efficiency and cooperation will be better secured by having physicians employed by the boards of education examine for physical and hygienic defects as well as contagious diseases. As soon as the latter are excluded from school they should fall under the jurisdiction of the board of health.

"4. In New York State medical inspection is rapidly extending and widening its sphere. . . .

"5. As physicians and citizens it is incumbent upon every member to urge the necessity of comprehensive and accurate medical inspection for defects that impede progress as well as diseases which endanger others."

SHAFER, George H. School medical inspection in New York City. Pedagogical seminary, 18: 303–14, September 1911.

Cases of major contagious diseases are at once excluded. The inspector immediately telephones the name and address to the borough office of the division of contagious diseases, and duplicates this by a notice through the mail and again includes the case in his daily report. The division of contagious diseases at once sends a diagnostician, except in case of diphtheria or pulmonary tuberculosis. If the diagnosis is confirmed the case remains under the control of the division of contagious diseases.

Cases of tuberculosis are referred for treatment to the family physician, or to the department of health clinic and a special report is made to the chief of the division of child hygiene.

A few weeks after school opens in the fall, a general routine inspection of all children is made by the medical inspector. This routine is made at the beginning of each term, and is repeated by the nurse at least once a month.

Contagious diseases are designated according to a certain code as follows: (1) Diphtheria, (2) pediculosis, (3) tonsilitis, (4) pediculosis,[1] (5) acute conjunctivitis, (6) pediculosis,[1] (7) trachoma, (8) pediculosis,[1] (9) scarlet fever, (10) measles, (11) varicella, (12) pertussis, (13) mumps, (14) scabies, (15) ringworm, (16) impetigo, (17) favus, (18) molluscum contagiosum, (19) acute coryza.

When the physician diagnoses a case he calls out the code number, and the teacher puts down the name of the child with the code number.

There are three classes of physical examinations. 1. Routine physicals. 2. Work paper physicals. 3. Physicals for athletics.

Each morning as soon as the inspector has made his tour of inspections, he stops at one of his schools to make regular physical examinations. These cover the following points: Defective vision, defective hearing, defective nasal breathing, hypertrophied tonsils, tuberculous lymphnodes, pulmonary disease, cardiac disease, chorea, orthopaedic defects, malnutrition, defective teeth, defective palate. A measurement of height is also made.

The examinations are made in the following order: First the children entering school for the first time. Second, beginning with children of the lower grades and proceeding to the higher grades in regular order.

SMART, Isabelle Thompson. Examination of subnormal children. Women's medical journal, 22: 57–59, March 1912.

"Medical examination of school children should be included in every city, town and district in the State, and the *special examination of all children thought to be mentally backward or deficient should be in evidence everywhere.*"

Gives some statistics gathered in the course of the author's medical work, 1910–11, as special examiner of the mentally unfit in the public schools of Greater New York.

Of one group, numbering 2,500, there were 204 who needed actual hospital care. There were 627 requiring general medical care; and 90 cases in such poor physical condition as to make an outdoor class imperative. There were 145 cases of epilepsy, the major number of them of the more serious form known as grandmal; 947 cases of masturbation; 946 cases of speech defect; cases needing dental care, 1,560. "The eye defects," says the writer, "were appalling, and ranged . . . all the way from a simple, slight strabismus to congential cataract of *both* eyes and tuberculosis of the eyeball. . . . I found 1,608 children suffering from aural defects; [and] 1,716 cases who had adenoids, or enlarged tonsils. . . . Eighty-one children had chorea, or St. Vitus Dance, while there were 876 cases showing various other forms of nervous diseases. In addition . . . there were 446 hearts in a pathologic state . . .

"Is it any wonder that such children are seldom promoted; that they are reported as nervous and irritable; that they are with difficulty controlled, and that so many of them become truant?"

SMART, Isabelle Thompson *and* **MACY, Mary S.** On the medical examination of children reported as mentally defective in the public schools. Pediatrics, 23: 665–71, November 1911. tables. charts.

Reprinted.

Data collected in the course of routine examination of 6,245 school children in the public elementary schools of New York City. The children were all backward.

Result of examination of 6,245 backward children in New York City.

	Percentage of examined.
Eye defects	88.6
Ear diseases or deaf	67.7
Defective teeth	72.7
Tonsils alone enlarged	32.2
Adenoids alone enlarged	29.6
Tonsils and adenoids	50.1
Speech defects	41.3
Epilepsy	6.4
Chorea	4.4
Other neuroses	32.7
Tubercular suspects	8.2
Cardiac weakness	17.5
Nutritional disorders	68.7

[1] The repetition of Pediculosis "was originally intended to shield the pupil. In the examination the pupils file past the physician who calls out the code number to the teacher or nurse as the diagnosis is made. Any one of the four numbers was recorded as pediculosis." (Letter of author, U. S. Bu. educa., Div. sch. hyg.)

65.6 per cent of all examined were boys and 67.4 per cent of all assigned for treatment were boys.

"The problem is a good one, and fraught with serious consequences if public sentiment is not aroused to the magnitude of the increase in defective mentality, and if some definite legislation is not speedily enacted along the line of eugenics."

NORTH CAROLINA.

FERRELL, John A. Report. Status of hookworm disease in North Carolina. *In* North Carolina. State board of health. Thirteenth biennial report, 1909–1910. Raleigh, N. C., Edwards & Broughton printing co., 1911. p. 53–55.

Of more than 600 North Carolina college students examined for hookworm disease, residents of 50 counties, one-third were found to be infected. Probably one-fourth of the rural population are infected, the highest infection percentage being among school children.

The plan of campaign is as follows: 1. The State will be divided into 16 or 18 sanitary districts. 2. Five practical physicians of experience will be appointed as field agents. They will devote their entire time to the campaign against hookworm disease. 3. Each field agent will be assigned to a sanitary district. He will be expected to cooperate with the doctors, teachers and "all other forces which may lend a helping hand toward making the facts and methods for eradication, common knowledge. Wherever practicable examinations will be made free."

A conservative estimate gives the annual loss occasioned by hookworm disease, in the State appropriation for public schools, as $187,500.

HAYWOOD, Hubert, *jr.* Results of the examination and treatment for hookworm disease of the pupils at the State blind school for the white. *In* North Carolina. State board of health. Bulletin, 26: 175–78, August 1911.

Out of 172 pupils examined, 83 were infected with hookworm disease; about 56 per cent of the boys and about 42 per cent of the girls, with one or two exceptions all being from country districts, largely from farms; not a single case from a city or town where there was a sanitary sewerage system.

RANKIN, W. S. What County boards of health are doing. *In* North Carolina. State board of health. Bulletin, 26: 334–43, January 1912.

Board of health rules:

"That all children attending schools shall be vaccinated or be excluded from school after January 1, 1912. (*See* Exhibit A.)

"That the county superintendent of health shall be provided with a suitable stereopticon lantern and a full collection of lantern slides, and that he shall give illustrated lectures in all of the public schools of the county on important phases of sanitation.

"That the teachers in the public schools shall examine the children for the common physical defects, and report on suitable blank forms furnished them by the county superintendent of health. Probably defective children shall be examined by the county superintendent of health, who shall notify the parent of the condition of the child and of the proper course to pursue to secure the necessary treatment. (*See* Exhibits B, C, and D.)

"That the public school teacher shall report to the county superintendent of health all absences from school on a post card furnished them by the said superintendent. (*See* Guilford County Exhibit E.)

"That the county superintendent of health shall notify the teachers of public schools of the presence of infectious diseases in the families that have children attending their school. (*See* Exhibit F). . . . [He] shall visit and make examination of all school buildings and grounds during the school vacation every year; . . . shall keep a record on file in his office showing the physical condition, recommendations, and effects of treatment of defective school children that have been referred to him by the teacher." (*See* Exhibit G.)

STROSNIDER, C. F. The frequency of hookworm infection among the whites as compared with the negroes. *In* North Carolina. State board of health. Bulletin, 26: 167–69, August 1911. table.

In the examination of 3,429 school children, 2,092 of whom are whites and 1,337 negroes, 34 per cent of the whites are infected against 15 per cent among the negroes. The infection among the rural whites is three times as frequent as among the semi-rural and those whose homes have sewer connection; and the rural negroes were found five times as commonly infected as were those in the large towns. The percentage was always lower, excepting one case, among the negroes.

The infection was found to be higher among mulattoes than among full-blooded Africans.

NORTH DAKOTA.

North Dakota. State board of health. [The medical inspection of school children in North Dakota] *Its* Bulletin, 4: 3–5, September 1911. (*Caption:* Back to school)

Section 236 of the 1911 session laws reads as follows:

"The board of any school corporation may employ one or more physicians as medical inspector of schools. It shall be the duty of the medical inspector to examine, at least once annually, all children enrolled in the public schools of the district, except those who present a certificate of health from a licensed physician, and to make out suitable records for each child, one copy of which shall be filed with the county or city superintendent of schools. Notice of physical defects of abnormal or diseased children shall be sent to the parents, with recommendations for the parent's guidance in conserving the child's health. The medical inspector shall co-operate with the state, county, and township boards of health in dealing with contagious and infectious diseases and to secure medical treatment for indigent children. It shall be the duty of the county and city superintendents of schools to co-operate with school boards in promoting medical inspection. He may arrange schools by groups, especially in the rural districts, for the purpose of inspection, and shall advise school boards with a view to securing the most efficient and economical administration of this law. The school board or board of education shall furnish all blanks and other needed supplies for this purpose."

The last legislature passed the following law:

"Each local board of health, at least once every thirty days, in such manner as it shall direct, cause to be adequately disinfected each school house, within its jurisdiction; provided this act shall not apply to school houses during vacation; provided, that except in case of emergency, the disinfection of school houses shall be made after school on Friday afternoon or on Saturday."

"Summing matters up we would respectfully recommend for the consideration of school boards all this time the following: 1. Medical inspection of schools. 2. Where this is not practical, engaging teachers who are competent to recognize the ordinary contagious diseases as well as the common physical defects. 3. That the attention of parents be directed to such physical defects as may be detected and suggestions made as to how they may be remedied. 4. Provide adequate sanitary accommodations for all pupils. 5. Abolish the common drinking cup. 6. Prohibit spitting."

See same: p. 6–7, October 1911.

"The last legislature passed a law making monthly disinfection compulsory. . . .

"In the opinion of Attorney General Miller this law is null and void on account of a discrepancy between the title and the body of the bill. He says:

"'I have traced the course of this measure through the legislature and find that it was several times amended and that, as finally passed, the title of the bill covered sufficiently the subject matter embraced within the body of the bill. It appears therefore that an error was made in the enrollment of the bill, so that when submitted to the governor for his signature it was a different measure than when passed by the legislature.'

"From this you will note that the legislature was right and that the bill fails through a technical clerical error."

OHIO.

AYRES, S. C. Civic medical inspection of school children, with special references to diseases of the eye, ear and throat. Journal of ophthalmology and otolaryngology, 6: 1–6, January 1912.

General; and Cincinnati, Ohio, in particular.

"The work done by the school nurses has been of the greatest benefit. Three nurses . . . had supervision of 13 schools. The following figures will give you some idea of what they did in 1910:

"They made 1,425 visits to the schools, and inspected 3,676 cases. They gave 1,191 treatments at the homes of the children, and 7,900 at the schools, and made 11,434 reinspections. They held 1,455 consultations with the parents."

Cincinnati. [**Board of education**] Medical inspection. *In its* Report of the public schools, school year ending August 31, 1911. p. 84–88. tables.

Under "supervision of the department of health by the district physicians. Primarily, its aim is the . . . detection of infectious and contagious diseases . . . School inspection includes also the detection of those physical defects which interfere with the child's ability to do his school work. . . .

"One hundred and two public and parochial schools were included in school hygiene, and in the congested districts 5 nurses were employed to look after the physical welfare of the children in 21 schools. . . .

"Three additional nurses were appointed for the present year. A daily notice is sent to every school in the city by the board of health, giving information concerning all the children of the city who are excluded for contagious diseases, and also a list of those who are permitted to return."

Total number of medical inspections for 1911, 11,811.

Diphtheria exclusions	8
Scarlet fever exclusions	67
Measles exclusions	11
Mumps exclusions	75
Chickenpox exclusions	143
Whooping cough exclusions	21
Impetigo contagiosa exclusions	56
Tinea exclusions	28
Scabies exclusions	76
Pediculosis exclusions	256
Other diseases exclusions	298
Total excluded	1,039

Examined but not excluded, 1,374.

Recommended for treatment.

Defective eyesight	800
Diseases of the eyes	303
Defective hearing	115
Otitis media	84
Hypert. tonsils	864
Adenoids	318
Eczema	266
Other skin diseases	314
Tonsilitis	510
Other diseases	1,577
Total	5,151

Examined but not recommended for treatment, 4,854. Total number examined, 24,229.

Defects of the eye, ear, nose, throat, in children of five public schools in congested districts:

Total examined	2,437
Defects of vision (33.36 per cent)	813
Defects of ear, nose, and throat (64.13 per cent)	1,563

Dental inspections have been held for three years; 14,886 school children have been examined, of whom 12,205, or 90 per cent, required dental attention Inspections are carried on by volunteers from the Cincinnati Dental Society. A permanent lecture committee addresses mothers' clubs, school children, and other organizations desiring its services.

In September, 1910, a free dental clinic was established in one of the school buildings; expense of operating the clinic about $2,000 for every 1,000 children.

"The most notable innovation is the so-called 'experimental class,' which is being conducted at the sixth district school—certain psychological, physical, sociological, and dental tests instituted; behavior attendance, scholarship, etc., recorded, and dental treatment given—the object being to demonstrate that through proper hygienic mouth conditions, scholarship, attendance, behavior, manner, etc., will be radically improved, thereby saving the municipality in actual money more than the cost of maintaining proper conditions. At the end of the year these tests will be repeated. . . . This is the first time that this experiment has been attempted with an entire classroom and the results should be of great scientific importance."

Cleveland. Board of education. Second annual report of the Division of medical inspection of schools, Cleveland, 1911–1912. 8 p. tables. 8°.

Number of cases fully corrected during the year 1911–1912 was 3,580, as compared with 1,793 for 1910–11. "Of the corrected cases, approximately two-thirds of the number were repeaters, presumably by reason of correctable defects."

	1910–11	1911–12
Inspectors	15	12
Nurses	15	18
Inspectors in special work	1	3
Hours	.....	14,110½
Inspections	.....	10,323
Examined	50,864	41,514
Defective	31,787	31,177
Not defective	19,177	10,337
Per cent defective	62.55	75.1
Exclusions	891	817
Treatments	12,132	12,766
Home visits	8,663	9,855
Dispensary visits	789	909
Eye clinic visits	762	833
Baths	.....	4,237
Dressings	.....	4,322
Cases corrected	1,793	3,580
Home investigations	495	1,009

	1910–11		1911–12	
	Found.	Corrected.	Found.	Corrected.
Number of defects	51,186	2,451	63,592	5,398
Teeth	16,464	248	21,784	1,813
Tonsils	7,776	563	7,212	1,016
Adenoids	3,434	494	11,343	825
Glands	5,010	17	7,577	111
Nasal obstruction	2,051	18	3,089	89
Hearing	1,320	33	1,276	92
Vision	10,709	1,026	5,912	1,378
Anaemia	987	3	1,119	21
Scoliosis	91	6	267	4
Nutrition	606	2	2,065	8
Mentality	334	.....	333	.....
Chorea	64	1	52	2
Extremities	93	.....	60	2
Chest	38	.....	22	.....
Discharging nose	451	.....	521	11
Discharging ear	176	3	98	12
Heart	216	13	173	2
Lungs	31	.....	38	1
Others	1,335	17	172	4
Goitre (included in others)	.....	6	479	7

Major communicable diseases.

	Found and excluded by school inspectors.		Reported to central office and reported to schools.	
	1910–11	1911–12	1910–11	1911–12
Tuberculosis	16	32	.....	.....
Tonsilitis	70	85	.....	.....
Trachoma	5	1	.....	.....
Diphtheria	3	3	650	1,125
Scarlet fever	11	24	1,927	1,108
Measles	10	7	1,429	1,310
Smallpox	.....	.....	1	1
Chicken pox	20	14	751	.....
Mumps	24	17	.....	.....
Pertussis	5	6	206	.....

Report of medical inspection of backward, defective, and mentally defective children of the public schools of Cleveland, Ohio.

Classification.	Chronological age.	Psychological age.	Number examined.	Per cent.
Idiots and low imbeciles	7 to 16	2 to 4	40	3.10
Middle and high imbeciles	9 to 17	5 to 7	140	10.92
Low and middle grade morons	12 to 16	8 to 10	267	20.84
High grade morons	16 to 17	11 to 12	22	1.71
Three years retarded	6 to 15	3 to 12	281	21.92
Two years retarded	6 to 14	4 to 12	275	21.46
One year retarded:				
Chronologically normal	6 to 13	5 to 12	213	16.62
Psychologically normal	6 to 11	6 to 11	41	3.20
Above normal	.....	.....	2	.15

Total number examined	1,281
Total number of feeble-minded	469
Total number of feeble-minded and border-line cases	750
Number now in special classes	302
Number now in boys' school	131

Cleveland. Superintendent of schools. Medical and dental inspection. *In his* Annual report, 1909. p. 70–72. table (results in two contrasted schools)

Examination of 30,000 children in grades III to VII, year 1906–7, by the Department of physical training, with respect to condition of eyes, ears, nose, and teeth.

In one school in "congested" district contrasted with results in "East End" school.

	East End.	Congested district.
Number examined	668	616
Defective vision ..... per cent..	32.4	17.1
Defective hearing ..... do....	5.2	1.8
Diseased ears ..... do....	8.9	12.8
Habitual mouth breathers ..... do....	12.1	14.7
Teeth very defective ..... do....	1.3	15.7
Teeth very dirty ..... do....	27.8	46.4

In March, 1909, of 36,403 children examined, the teeth were found to be defective of 27,918.

"Though the Cleveland schools have never enjoyed a complete system of medical inspection, the department of health, through its ward physicians, protect the schools from infectious diseases. . . . In addition, under the general direction of the school physicians, there have heen located in schools in foreign districts, six school dispensaries, five of these being established this year. . . . At each is stationed a school nurse; . . . a new feature of this year."

Cleveland chamber of commerce. Report of the Municipal sanitation committee on medical inspection in the schools. 10 p. 8°.

Approved by the Cleveland chamber of commerce, February 23d, 1909.

Historical sketch, and argument for medical inspection based on Superintendent's report for Cleveland schools, 1907: "That the schools are suffering a great economic and moral waste. . . . 8,595 children, 13.3 per cent of last year's enrollment, were three or more years behind their grade. At the estimated tuition cost of $26 per enrolled pupil per year, this number represents a dead loss per annum of $223,470. It is estimated that less than one-tenth of this sum will provide an adequate system of medical supervision. If such a system resulted in the saving of only one grade to not more than one in ten of these backward children each year, it would prevent a greater waste than it would cost."

McHENRY, Junius H. Medical school inspection in Cleveland. Cleveland medical journal, 8: 338–46, June 1909.

Also in Ohio State medical journal, 6: 641–45, December 15, 1910., *Title:* Medical inspection of schools.

In March 1906, the board of health appointed 26 physicians to attend the indigent sick and to inspect the public and parochial schools. The ward physicians organized themselves into the Cleveland medical school inspectors association; redistributed assignments of schools, effective in 1907.

Each inspector visits each of his schools daily. During school session, monthly meetings are held by the inspectors and representative medical men and specialists, to discuss conditions and present addresses.

"Cleveland has installed a system which, I believe, does not exist in other cities, namely school dispensaries. These are situated in the congested foreign element districts of the city. Two such dispensaries are now used and others are being equipped. It is the intention of the board of education to establish others . . . where they are most needed. A graduate nurse of the visiting nurses association is in charge . . . and is under the instructions of the school inspector. . . . After school hours the nurses are required to visit those children who were absent, on account of exclusion. . . . As a result 90 per cent of the children that otherwise would have been excluded, are enabled to continue in attendance . . . without exposing any of the associated children to the dangers of infection."

Treatment is given at these dispensaries for emergency cases only. A card system is in operation, "intended to follow the child through its school life and the information is confidential for the boards of health and education," regarding the home and health conditions found in investigation.

WALLIN, John Edward Wallace. Medical and dental inspection in the Cleveland schools. Psychological clinic, 4: 93–108, June 15, 1910.

Bibliography: p. 108.

Between the school nurse and the dispensary of one school alone, 1,871 days in school were saved for children who otherwise would have been excluded. "As a result of this hygienic and medical work the attendance records have reached unprecedented heights in these irregular stations."

OKLAHOMA.

CLOUDMAN, H. H. Medical inspection in the public schools. Oklahoma school herald, 19: 14–16, May 1911.

The department of medical inspection was organized about October 18, 1910.

About 8,000 pupils were inspected. They were presented with cards which they filled out. They gave their personal history relative to contagious diseases and other ailments; and stated if they had had any trouble with eyes, ears, nose, throat or teeth, and if these had been treated.

The findings were about the same as those of other cities. Fifty per cent or more had defective teeth; 30 per cent had some type of throat trouble, mostly enlarged tonsils; 9 per cent had eye trouble; and 3 per cent had ear troubles.

The board of health reports "all cases quarantined for any contagious disease and this in turn is reported to the principal of the school to which the child belongs and instructions given to exclude all others from this same family unless they have a certificate . . . that there is no danger of further spread through them as disease carriers. The principals in turn report all cases of which they learn and these cases are reported to the board of health."

PENNSYLVANIA.

DIXON, Samuel G. Medical inspection of school children. Pennsylvania medical journal, 15: 939–41, September 1912.

Also in Pennsylvania school journal, 61: 216–18, November 1912.

State law for medical inspection of school children in Pennsylvania passed in 1911; responsibility placed "upon the school authorities with the exception of the districts of the fourth class which were allotted to the State department of health providing the school directors see fit not to vote against it each year. . . .

"The result of the influence of the efforts of the National league for medical freedom was as follows:

"The directors decided that 139 districts should not have examinations, which defrauded 214,000 children of help. In the fourth class 1,617 districts, representing 408,000 pupils, were also defrauded by the acts of the school directors. Therefore 622,000 children were left to go without the medical care given in other counties. This, however, left 652,000 who did reap the benefit of medical examination and of these, 207,000 were examined by the State department of health.

"As the result of this inspection, approximately 105,000 children were found to have one or more of the defects enumerated, 255,000 defects having been found by the inspectors. The returns from the teachers at the end of the school year would indicate that thousands of our children have been directly benefited by the inspection made last year."

HAMILTON, S., *jr.* Medical inspection of schools. Hahnemannian monthly, 47:110–17, February 1912.

"Medical inspection in Pittsburgh has in view two objects:

"1. Routine class room inspection, which is solely for the detection of communicable diseases, and which relates, primarily, to the immediate protection of the community.

"2. The physical examination of each child, which aims to discover defects, diseases and physical condition, thus looking to the securing and maintaining of the health and vitality of the individual. Physical examinations, to be effective, must follow the child from grade to grade and from year to year."

Harrisburg. Department of medical inspection. Report. *In* Annual report of the public schools, for the year ending June 1910. p. 51–53.

Total number routine examinations	7,504
Total number showing some defect	2,423
Defective vision	677
Defective hearing	143
Defective teeth	187
Hypertrophied tonsils	805
Adenoids	432

Johnstown. [Board of school directors] Instructions to school physicians relative to medical examination of school children in Johnstown, Pa. *In its* Report and manual, 1912. p. 27–31.

Each inspector must "make frequent examination of the general conditions of the buildings, noting cleanliness, toilets, heating, ventilating, lighting, condition of blackboards, and all things that may affect the general health of the school inmates. . . .

"Each school physician shall also from time to time make such examination of teachers and janitors as the health of the pupils may require."

KEEN, Edwin L. Medical inspection and precaution in the schools. Pennsylvania school journal, 60: 407–408, March 1912.

Reprinted in Pennsylvania educational association. Directors' department. Proceedings, 1912. p. 121–22.

"The Harrisburg school district, on the advice of our superintendent, created a voluntary department of medical inspection, with one physician and one nurse, without cost to the district, in the year 1907–8. After one year's work the results were so gratifying that the district decided to continue the department the next year by the employment, on a fixed salary, of one physician and one nurse. The following year, an additional nurse was employed. . . . A complete card system was instituted . . . and a full set of blanks was provided. . . . The following will show some of the most important defects: . . . Malnutrition, 2.83 per cent; chorea, 0.162; heart disease, 0.473; pulmonary disease, 0.286; skin disease, 5.06; defective spine, 0.261; defective vision, 14.83; defective nasal breathing, 5.27; defective hearing, 1.38; defective teeth, 2.18; hypertrophied tonsils, 12.80; adenoids, 3.11. . . .

"Out of 1,416 pupils reexamined at the end of the first year, 448, or 31 per cent, had consulted the family physician."

LAFFER, Cornelius C. The results of the examination of the school children of Meadville and its importance. Pennsylvania medical journal, 15:941–44, September 1912.

Some 75 per cent of the children have bad teeth; from 15 to 20 per cent, enlarged tonsils or adenoids; about 10 per cent have defective vision.

Philadelphia. Board of public education. [Health rules for infectious and contagious diseases in the public schools] *In its* Annual report, year ending December 31, 1910. p. 313.

"SEC. 2. It shall be the duty of the principals to report quarterly, to the superintendent of schools, the number of nonvaccinated children applying for admittance to their respective schools.

"SEC. 3. When smallpox, scarlet fever, diphtheria, diphtheritic croup, membranous croup, cerebrospinal meningitis, cholera, yellow fever, bubonic plague, glanders or anthrax shall exist in the family of any pupil or teacher, or any person connected with, any of the public schools of this district, or in the house in which any of said pupils, teachers or other persons reside, all such pupils, teachers or other persons shall be excluded from school and the school building, and shall not be permitted to return until he, she, or they shall present the written approval of the bureau of health.

"SEC. 4. When measles, german measles, chickenpox, mumps, or whooping cough shall exist in the family of any pupil or teacher, or of any person connected with, any of the public schools of this district, or in the house in which any of said pupils, teachers, or other persons reside, no such pupil, teacher or other person shall be permitted to attend school or enter the school building, without the written approval of the bureau of health; such approval to be based upon careful examination of all the circumstances surrounding the case.

"SEC. 5. Any pupil suffering from tonsilitis, contagious eye diseases, or parasitic diseases of the head or body, must be excluded from school until the bureau of health shall have certified that all liability to communicate the disease to others has passed."

Reading. Board of education. Medical inspection. *In its* Annual report, 1910–1911. p. 10–12.

"The sanitation committee of the school board has conducted experimental medical inspection for several years. . . . Of 8,331 pupils examined, up to June, 1910, 4,372 suffered with defects."

Defective vision	1,526
Defective hearing	733
Enlarged tonsils	1,954
Adenoids	351

About 6,108 separate defects were found.

The school nurse assists in the medical inspection. In addition to medical inspection by a physician, pupils suffering from stuttering are treated.

In 1910 the Reading dental society detailed 25 of its members to inspect the teeth of the pubilc school pupils. Of 8,925 examined, less than 3 per cent had perfect teeth. Of nearly 9,000 examined in the winter of 1909–10, only 4,849 had ever used a tooth brush, 1,369 had ever been to a dentist, and 1,094 had had permanent teeth extracted.

Permanent teeth cavities	28,548
Temporary teeth cavities	14,707
Green stain	5,910
Abnormal gums	925
Tartar	1,866
Abnormal occlusion	1,554
Atrophy of teeth	308
Mouth breathing	236
Putrescent pulps	1,894
Exposed pulps	1,717

A free dental clinic was organized and in eighteen months treated the teeth of 275 pupils.

RHODE ISLAND.

CHAPIN, Charles V. Medical inspection of schools in Providence. [Ansonia, Conn., The Emerson publishing co., 1909] 15 p. 8°.

Begun, in Providence, R. I., 1894, following Dr. Durgin's work in Boston; teachers and parents of pupils in large grammar school subscribed a sum of money and hired a physician as school physician for one month. Appropriation of $1,000 for school inspection followed the results obtained—two inspectors, a man and a woman were appointed.

In Providence, the children come to the inspector. On every school day in the year an inspector is on duty at the city hall, between 12 and 1 o'clock; he examines the children sent by the teachers; to them he gives a note stating his findings, which the children take to their teachers. Teachers are "expected to see that the child's parents are notified, and if any treatment is necessary to see that it is carried out."

Providence. School committee. [Medical inspection] *In its* Report, 1909–1910. p. 126–28.

Signed: Ellen Le Garde.

"In the spring of 1904, medical inspection was inaugurated in the Providence schools. Since March 1, 1909, three inspectors have been employed, and on April 1, of the same year, this inspection was extended to the parochial schools. . . . In 1906 a school oculist was employed. . . . The great part of the work of the school inspectors is with contagious skin diseases and pediculosis. These cases are treated at the city hall and the material needed furnished by the board of health.

"In February, of 1909, a school nurse was introduced. She follows up the cases from the school to the home; . . . also sees that children sent to the oculist and to the hospital get there. School baths have been in existence since 1905. . . . Four school matrons attend to the daily baths in the different buildings."

SOUTH CAROLINA.

GANTT, L. Rosa H. Medical inspection of schools in Spartanburg, S. C. South Carolina medical association. Journal, 7: 329–34, September 1911. tables.

Reprinted in Pediatrics, 23: 337–42, June 1911.

Following the work of Dr. Hines in Seneca, S. C., the Spartanburg County, S. C., Medical society undertook the examination of Spartanburg city school children, 1910–11, without charge.

Scope of work: (1) The detection of parasitic, infectious and contagious diseases; (2) exclusion from school of all children affected with acute contagious diseases; (3) inspection of each school child for physical defects and noncontagious infection; (4) inspection of the hygienic and sanitary condition of the school buildings and premises.

In each case, the inspectors made complete record on three blanks: (1) A history card kept by the examiners; (2) a record card kept by the school authorities; (3) a notification card sent to the parent.

	Children examined.	Defective.	Per cent.	Teeth defective.	Hypertrophied tonsils.
				Per cent.	*Per cent.*
Whites	1,891	822	42.5	19	21
Colored	676	355	56.0	30	41

Colored.

	First grade.	Second grade.	Third grade.	Fourth grade.	Fifth grade.	Sixth grade.	Seventh grade.	Eighth grade.	Total.	Percentage.
Number examined	243	89	109	94	34	28	28	9	678	.....
Total defects	167	114	84	69	41	25	27	17	544	56
Total defectives	116	70	60	43	25	18	14	9	355	56
With 1 defect	74	38	42	27	12	11	5	6	215	.....
With 2 defects	36	22	11	11	11	7	5	4	106	.....
With 3 defects	4	8	6	4	1	0	4	1	28	.....
With 4 defects	1	2	1	2	1	0	0	0	7	.....
With 5 defects	1	0	0	0	0	0	0	0	1	.....
Adenoids	4	1	1	1	0	0	0	0	7	.....
Tonsils	58	31	22	18	10	5	2	2	147	41
Vision	21	24	6	11	7	1	9	7	86	24
Hearing	17	15	12	8	6	6	2	0	67	19
Eyelids	2	3	4	4	2	1	1	0	16	4
Teeth	26	17	23	13	7	7	9	6	107	30
Skin	20	9	9	5	5	3	0	0	51	14
Anemia	10	6	3	4	3	1	2	1	29	8
Pediculosis	0	7	4	0	0	0	0	0	11	11
Enlarged glands	6	1	0	3	2	0	1	1	13	.....
Other defects	4	0	3	2	9	1	1	0	11	.....
Per cent defectives	47.7	78	55	45	73	64	50	100	.....	56

HINES, E. A. A plea for medical inspection of school children in South Carolina—Report of the work at Seneca. South Carolina medical association. Journal, 6: 454–57, September 1910.

"The Seneca schools are the first in South Carolina to put in operation the modern idea of medical inspection," beginning September 23, 1909. Staff of examiners: Two competent dentists, an eye and ear, nose and throat specialist, two general practitioners, and a secretary; 200 children, ages 6 to 18, pupils first to tenth grades, examined.

Children having—	Number.
Defective teeth	153
(Number of teeth, 600.)	
Defective tonsils	32
Enlarged glands	24
Adenoids	3
(Number of suspects.)	
Eye defects	19
Nasal defects	3
Skin lesions	2
Orthopedic defects	4
Teeth brushed daily	170

"I can not find any report on the negro school child in the South. I examined a representative number and found in general faulty nutrition, practically all with teeth defects—contrary to the idea that prevails. Fewer serious tonsil defects compared to the whites, more skin lesions. I did not examine for adenoids. A fair proportion had used the tooth brush.

"I also examined a representative number of cotton-mill children among the whites. Ninety per cent had bad teeth—not one used a toothbrush."

South Carolina. State board of health. Hookworm disease. *In its* Thirty-first annual report, 1910. p. 15–18. table.

From October 1 to December 10, 1910, in five counties, 4,695 children were examined clinically; 80, microscopically; 165 cases treated; 47 per cent gave clinical evidence of being infected with the hookworm.

South Carolina. State board of health. Medical inspection of schools. *Its* Monthly bulletin, 1: 3–29, October 1910. tables.

"The Southern States have been behind almost all the rest of the countries of the civilized world in introducing medical inspection of schools. . . .

"New Orleans was the first Southern city to take active steps in this direction in 1908, and Atlanta, in 1908 and 1909. In South Carolina the complete modern idea of medical inspection of schools was inaugurated in the Seneca graded and high schools, September 23, 1909. . . . The examination [was] conducted by two general practitioners of medicine and surgery, two dental surgeons and one eye and ear, nose and throat specialist, a secretary and the teacher of each grade."

Of the defects discovered among 200 pupils, "children of the very best and most prosperous citizens of the Piedmont section," were:

Glands enlarged	24
Eye defects	19
Teeth defects	153
Tonsil defects	32
Not vaccinated	168

"A representative number of children of the cotton mill and negro schools disclosed a much greater number of defects."

[South Carolina] The veto of the Medical inspection bill. South Carolina medical association. Journal, 8: 62–63, March 1912.

Passed, with some amendments by the General assembly, and vetoed by the governor.

WARD, J. La Bruce. Hookworm disease; its eradication in South Carolina. South Carolina medical association. Journal, 7: 341–43, September 1911.

Work in the schools of 11 counties in South Carolina, chiefly the southern and southeastern parts; of the 1,100 children examined, 37½ per cent were infected.

"That is, they gave clinical evidence of the disease. A microscopical examination would show a much heavier infection. Following that we examined about 4,500 children in Kershaw, York, and Abbeville. The lightest infection was in Abbeville County. We believe the adjoining counties will have as light an infection. Dr. Weinbery examined 1,180 children, and found only 7 suspects; whereas in some other parts of the State we found at least 75 per cent of the children showing clinical evidence; . . . and I am satisfied, from the microscopical findings so far . . . would have shown an infection of 100 per cent. . . . At Furman university, where 100 specimens were examined, without examining the men at all until after . . . 38 per cent were found infected; . . . and I should not have made a single diagnosis on clinical findings.

"At Clemson College we found 33 per cent of 65 men examined infected, and I would not have made a clinical diagnosis of any of those cases.

"Taking the 9,000 children examined in the State, we find an infection of over 25 per cent, clinically; . . . microscopical findings would have run much higher."

TENNESSEE.

HILL, David Spence. The status of school hygiene in Tennessee. *In* American school hygiene association. Proceedings, 1911. Springfield [Mass.] 1911. p. 155–63.

There is little teaching of school hygiene in its technical aspects in Tennessee. The State has no general law requiring medical inspection of school children. In Knoxville, Memphis, Chattanooga, and Nashville encouraging beginnings have been made, but "no full-fledged system with sufficient nurses, trained physicians and thorough organization supported by the city or State exists in Tennessee." During 1909–10 examination of throat and teeth was undertaken in Nashville. The following summary was presented by the inspector, Dr. E. L. Roberts, on December 26, 1910:

Pupils examined	2,455
Defective vision	148
Crossed eyes	36
Trachoma	117
Other eye inflammations	68
Discharge from ear	24
Frequent earache	123
Enlarged tonsils	199
Defective teeth	698

TEXAS.

Fort Worth. [Superintendent of schools] Report of the medical supervisor. *In his* Annual report, September 1910. p. 35–47.

"Physical examination of school children was begun April 1. . . . In all, over 1,000 children were examined, of these 710 were referred for treatment—medical, surgical, or dental. (It was not possible to examine systematically each child so near end of school year.)"

The first to fourth grades inclusive in all schools were inspected, and in most of the districts all grades. The 710 cases referred may be summarized as follows:

Eyes	209
Tonsils	300
Adenoids	132
Ears	77
Enlarged glands of the neck	123
Anemia	72
Tuberculosis	12

Teeth	203
Speech	15
Nervous disorders	33
Acute throat trouble	31
Mentality	8
Kidney and urinary	10
Miscellaneous (about)	25

"The water tanks now in use are never sterilized, or even cleaned with brush and water. The drinking cup problem is unsolved."

Houston. [School board] Report of medical inspector, June 15, 1911. *In its* Annual report, 1910–1911. p. 59–60.

Signed: W. Wallace Ralston, M. D.

Thirty-eight children, with trachoma, excluded; 74 with symptoms of trachoma.

Houston dental society gave lectures to the children on "The care of the mouth and teeth."

Free eye, ear, nose, and throat clinic established in connection with the city health office, and free dental service offered by the Texas dental college for poor children.

STILES, Charles W. Special report on a preliminary survey of Texas to determine the distribution of hookworm disease. 13 p. table. mimeographed.

Institution.	Number examined.	Positive.
		Per cent.
State university	28	25.0
Agricultural college	30	10.0
Sam Houston college	94	27.5
State medical	86	9.3
State blind	16	43.7
State deaf and dumb	10	20.0

Geographical distribution by counties, p. 5–9 (found in at least 45 counties. Most of the infection thus far known was in the eastern part of the State).

School children: p. 9–13. table.

"Of a total of 1,776 school children seen in 11 different schools and orphanages, 21.5 per cent showed symptoms upon a quick inspection which justified the suspicion that they had hookworm disease. Of 876 boys, 30.7 per cent, and of 900 girls, 12.6, came into the suspect category.

"Of these 1,776 children . . . about 46 per cent . . . were clearly below par, physically. . . . This does not mean that 46 per cent were classified as hookworm suspects. . . . These figures show that nearly half were below normal and that in that condition they can not possibly digest all of the education offered them. . . .

"In some regions about 30 per cent of the school children harbor the disease. . . .

"A campaign against the disease ought to be undertaken without unnecessary delay.

"The public schools of Texas are badly in need of a medical inspection system. . . .

"The sanitation of the school yards is in sad need of attention; . . . their present condition makes them centers from which the various soil-pollution diseases may be spread. . . . In several school yards examined as to sanitation the grading was only 10 on a scale of 100. According to information obtained from one county superintendent of education the index [healthful condition] of 90 per cent of the rural schools in his county is zero (0) on a scale of 100."

VIRGINIA.

PLECKER, W. A. The economic phase of hookworm disease. Virginia medical semi-monthly, 16: 213–15, August 11, 1911.

"In the four counties of Southside Virginia . . . I find an extremely serious phase of the subject. . . . The rural schools in which these examinations have been made show about 50 per cent of infections. . . . In one badly infected portion of my territory there live 20 families with 35 or 40 children of school age. This whole community supplies just two pupils, little girls, to the nearby school. In not one of these families is there the slightest semblance of toilet arrangements. . . . Not one-fourth of these adults possess even the rudiments of an education."

"FOOTNOTE.—In reports from seven teachers of Richmond County, statement is made that from 20 to 60 per cent of their labor is lost on account of the presence of hookworm disease, the average of all being 40 per cent."

Richmond. Superintendent of public schools. Medical and dental inspection. *In his* Annual report, year ending June 30, 1911.

South Richmond physicians, session 1910–11, conducted examination of 1,380 pupils. Results: Defective eyes, 380 cases; enlarged tonsils, 237; adenoids, 111; defective hearing, 13.

Examination of mouth conditions made by the Dental association of Richmond, elementary school pupils. Total examined, 10,919. Pupils having perfect teeth, 1,125; total number of cavities, 20,684.

The city council, by appropriation in March 1911, provided for two physicians and five nurses, including the nurse already at the John Marshall high school; appropriation available, September 15, 1911.

Virginia. [State] Commissioner of health. Hookworm disease. *In his* Annual report, year ending September 30, 1911. p. 19–31. tables.

In Mecklenburg County, of 279 rural school children "taken at random, 133, or 47.7 per cent had hookworm."

WASHINGTON.

Spokane. [Board of education] Medical inspection. *In its* Biennial report; for the two years ending June 30, 1910. p. 37–39.

Department of medical inspection organized at opening of school year 1909–10; chief inspector and four assistants. Regular inspection began September 1909. All schools shall be inspected at least once a week (conditioned). Monthly report to be made by the chief medical inspector, of all work done, copy given board of health, and board of eduaction. Each school principal to make weekly report to superintendent of schools.

Summary of chief medical inspector's monthly reports.

Total individual inspections of pupils, 84,232.

"In addition to the work . . . designed for protection of the schools and communities against contagion and infection, there was a thorough inspection of all the school children for defective vision and other eye troubles, for enlarged tonsils, adenoid growths, defective teeth, and other forms of physical infirmity."

THOMPSON, N. L. Medical inspection of schools. Northwest medicine, n. s. 3: 134–37, May 1911.

Bibliography: p. 137.

"Replies received from nine cities showing that medical inspection to a greater or less extent was utilized in Seattle, Spokane, Tacoma, Everett, North Yakima, Olympia, and Aberdeen; negative replies were received from Walla Walla and Wenatchee, and no reply from Vancouver and Bellingham. . . .

"Educational agencies must employ expert medical inspectors who shall see that the health of the school child is conserved.

"It ought not to be an incidental activity of some department but must eventually outrank all others in power as it does in importance. It should aim to accomplish the following: (1) Prevention of infectious and contagious diseases. (2) Scientific supervision of sanitary condition of premises, school buildings, furniture, etc. (3) Teaching of hygiene to teachers and children and through them to the community. (4) Physical education, including supervision of manual training, gymnastic exercises, organized games, etc. (5) Physiology and psychology of ordinary educational methods, including fatigue, neurasthenia, hysteria, questions of sex, etc. (6) Special educational methods for abnormal chilrden—the mentally and physically defective, the dull and backward, the blind, the deaf, etc. . . .

"The medical inspector must, therefore, be broad minded, with sound and extensive medical knowledge, interested in child life, sympathetic, tactful, an investigator; in short, a medical man, a psychologist and a pedagogue."

WISCONSIN.

BARTH, G. P. Medical inspection of schools in Milwaukee. Wisconsin medical journal, 9:151–62, August 1910.

Begun Fall of 1907.

The city is divided into nine geographical districts; eight, approximately equal in size and contain about the same number of schools; the ninth in the central, or slum district, covers less area because conditions are worse. Each district is under the care of one Assistant medical inspector. For the work of the nurses, the city is divided into four districts, the three outlying territories about equal in size, the central one, smaller.

"Backward" cases are reported by teacher to the chief medical inspector, on the psychological examination blank, on which she records all the family and school history of the child she can collect. When found below par, mentally, by the chief medical inspector, the child is transferred to the "exceptional" school. Classes for the stammerers have been opened; three classes for the blind, in the public schools; the deaf and dumb segregated into a school. No provision has been made for the weak, the anemic, or the crippled.

JONES, Richard W. Medical inspection of schools. Wisconsin medical journal, 10:319–27, October 1911.

Inaugurated in Wausau, Wis., following scarletina epidemic 1909–10. First intention simply to examine for contagious diseases, but work was extended to cover physical examinations.

During the year, up to May 1, 6,677 children were examined for contagious diseases, and about 1,600 given physical examinations. Among defects found were: Scabies, 33; impetigo contagiosa, 35; enlarged tonsils, 744; adenoids, 170; defective vision, 43.

"The effect of medical inspection has been to increase the average daily attendance in the schools. With practically the same total enrollment this year [to date April 1, 1911] that there was last year, there have been 8,277½ days more attendance than for the corresponding months of last year . . . at no additional expense for instruction. . . .

"The fallacy of our system has been that we have not had enough authority to enforce our rulings. Many parents refuse to have their children examined or to follow the instructions of the examiners. . . . We should have legislation to cover this point. . . . We should have compulsory examinations of the school children, at least for contagious diseases and eye and ear diseases with possibly diseases of the nervous system. . . . This law should provide for the control locally of the examining bodies, and . . . examining physicians should be trained along these special lines."

Discussion: p. 327–35. In Milwaukee: p. 327–29 (Barth, George P.). In Madison: p. 329–31 (Bardeen, C. R.).

MADISON.

Madison. Superintendent of public schools. Medical inspection in Madison. *In his* Annual report, 1910–1911. p. 44–51. chart. p. 47.

Made under direction of the Madison antituberculosis association, W. D. Frost, president; assistant nurse, Miss L. Dietrichson; 6 of the 11 city schools, pupils examined and eyes tested. There were examined 1,152 children; but 422 had been vaccinated.

	Cases.		Cases.
Defective vision	340	Defective teeth	604
Disease of the eye	41	Skin disease	17
Defective hearing	99	Cough	118
Ear disease	96	Throat trouble	281
Defective breathing	246	Lung trouble	56
Adenoids, known cases	20	Anemic	108

Milwaukee. Board of school directors. The dental clinic [and medical inspection] *In its* Annual report, year ending June 30, 1911. p. 82–94. tables. diagrs.

The Free dental clinic established in the quarters of the department of medical inspection, under charge of the Milwaukee public school free dental clinic association; members of the clinic pledged to serve one-half day each month; all the expenses except the rent of room, borne by the association. Work began February 20, 1911: Number of treatments given, 349; number of permanent teeth filled, 584; number of permanent teeth extracted, 41.

"It is sometimes desirable that a medical examination be had in certain cases in order to determine (*a*) the advisability of school attendance, (*b*) the necessity for temporary absence from school, (*c*) the limitation of the amount of school work to be done, (*d*) attendance at special schools or classes, (*e*) medical or surgical procedures necessary or advisable to promote good health or to promote school progress by the removal of physical disabilities, and the department of medical inspection has been freely consulted by other departments in these matters. The following cases were submitted: (1) the truancy department referred 51 cases for nonattendance. (2) By the superintendent's department, 5. (3) by teachers and principals, 42. (4) By the State factory inspector for advice as to the kind of employment permissible to the child, 2. (5) By parents, 19. (6) By doctors and nurses, 129.

On October 24, 1910, The common council passed the ordinance, the text of which is as follows:

"An Ordinance to protect the health of school children. . . .

"SEC. 1. No parent or other person having charge or control of any child between the ages of seven (7) and sixteen (16) years shall permit or allow such child to attend school in a filthy or neglected state, or affected with pediculosis, ringworm of the body or scalp, scabies, impetigo contagiosa, molluscum contagiosa, or infectious dermatitis, or any other contagious or infectious diseases; and any parent or other person having charge or control of any such child so affected shall, after receiving notice given under authority of the board of school directors that such child is so affected, remedy such condition within the following time:

Ringworm of the body (*Tinea circinata*)	days	30
Impetigo contagiosa	do	30
Molluscum contagiosa	do	21
Infectious dermatitis	do	30
Pediculosis of any part of the body	do	14
Ringworm of the scalp (*Tinea tonsurans*)	months	3
Favus	year	1
Scabies of any part of the body	days	14

And any other contagious or infectious diseases within a reasonable time.

"SEC. 2. Any person violating any of the provisions of this ordinance shall be punished by a fine of not less than $1, nor more than $50 for each and every offense, and in default of payment thereof shall be confined in the house of correction of Milwaukee County for not less than ten days or more than sixty days.

"SEC. 3. This ordinance shall take effect and be in force from and after its passage and publication."

See also p. 28–36 (Elementary grades).

Number withdrawn from school on account of personal illness, 56; mental inability, 13. Failure of promotion because of personal illness, 335; physical defects, 169; inability, 1,900.

TOBEY, Silas B. A successful plan for medical inspection. American school board journal, 42: 9, May 1911.

Established, September 1910. Seven physicians are employed, one for each school center—eight schools, two of which are within half a block of each other. Each physician visits his school at 9 a. m. on each of the five school days of the week, receiving $1 for each visit. The parochial school children are also sent to the examining physicians.

Every child who has been absent one-half day without prior knowledge and consent of teacher must obtain from physician of his school, a clean bill of health before he may resume school work. A free infirmary and two visiting nurses are supported by private subscription. Poor children are treated free and the nurses visit the homes.

"The effect of medical inspection has been to increase the average daily attendance in the schools. With practically the same total enrollment this year that there was last year, there have been 8,277½ days more attendance than for the corresponding months of the year The same number of teachers . . . able to care for an average of 83 more pupils in daily attendance this year than we had last year at no additional expense for instruction. . . . We have found the medical inspection one of the most valuable adjuncts to our schools."

MEDICAL INSPECTION RECORDS.

GENERAL REFERENCES.

AYRES, Leonard P. Forms for record-keeping. *In his* Open-air schools. p. 139–48.

Open-air school records of the medical inspection and condition of the pupils: Chicago, Boston, Hartford, Providence.

Cleveland. [Board of education] Card and record system. *In its* The work of medical inspection with statistical report, Cleveland public schools 1910–1911. p. 21(20)–32.

Cleveland's use of system: p 37–46.

CORNELL, Walter Stewart. Good and bad forms of record keeping. *In* American school hygiene association. Proceedings, 1911. Springfield, Mass., American physical education review, 1911. p. 65–73.

"Every record card should provide accommodation for a number of examinations, at least four. . . . It should provide for a record of the notification to parents . . together with the date of such notification and official information as to whether or not the defect has been corrected. The age, grade and social condition of the child should be noted and briefly commented upon . . . in connection with the record of his physical defects. . . . The principal defects . . . are only ten in number and . . . may well be given a definite mention upon the record card, since an inspector is less likely to overlook a defect in a child when he is compelled to make a definite record whether or not it exists. For this reason the eye, nose and throat, the ear, teeth and nutrition should be given permanent space on the card; and the skin, the skeleton, the glandular and nervous systems and the mentality should have a definite mention."

CORNELL, Walter Stewart. Keeping of records. *In his* Health and medical inspection of school children . . . 1912. p. 45–57.

University of Pennsylvania, physical record card, p. 49; Dr. Newmayer's card, p. 57.

See also p. 568–77. tables.

MacMURCHY, Helen. [Facts to be noted in examination of feeble-minded children] *In* American school hygiene association. Proceedings, 1911. Springfield, Physical education review, 1911. p. 80.

1. Date and age. 2. Name, address, school, class, etc. 3. Condition of teeth. 4. Condition of nose. 5. Condition of throat. 6. Condition of vision. 7. Condition of hearing. 8. Speech. 9. Reading. 10. Writing. 11. Number work. 12. Hand work. 13. Attention. 14. Memory. 15. Intelligence. 16. Aptitudes. 17. Moral sense. 18. Physical condition. 19. Gout. 20. Coordination. 21. Cause of backwardness, if known.

Rochester [N. Y.] record cards. American school board journal, 45: 44–45, August 1912. figs.

"The health card is made out by the teacher and sufficient for the entire life of a pupil. Entries are made by the school nurse or the teacher from the examination of the medical inspector. On the reverse side space is provided for diagnoses of defective conditions and statements of treatments recommended."

VACCINATION.

KERR, John W. Vaccination. An analysis of the laws and regulations relating thereto in force in the United States. . . Prepared by direction of the Surgeon-General. Washington, Government printing office, 1912. 82 p. 4°. ([U. S.] Public health and marine-hospital service. Public health bulletin no. 52)

St. Louis. Board of education. Report on vaccine virus and on the results of vaccination in the public schools of St. Louis, 1912. *In its* Official report, 18: 564–68, February 13, 1912.

Regarding the vaccination of 577 children vaccinated by the vaccine physicians of the health department, and 218 vaccinated by physicians in private practice, in contrast to the excellent public vaccinations, it was found in several schools that the private operations by certain physicians were uniformly negative.

In the cases in private practice it was discovered that the proportion of takes for the year was "still dangerously low, leaving 63 unprotected persons per 100, instead of 22 per 100 among those vaccinated by the health department."

The inspections for the last two years exhibit the great advantage of public vaccination. The regular vaccination of public school children is the most important prophylactic work done in the city.

See also p. 417 (December 12, 1911). List of cities requiring evidence of successful vaccination as a condition of admission to the public schools: Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, Newark, New Orleans, New York City, Philadelphia, Pittsburgh, San Francisco, and Washington.

APPENDIX A.

BLANKS AND RECORDS.

CHICAGO, ILL.

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

....., *School—Building* {*Old.* / *New.*

Health officer, ... M. D. Nurse.....

1. School phone.....
2. Enrollment.....
3. Number of rooms.....
4. Ventilation: Good.....; fair.....; poor.....
5. Light: Good.....; fair.....; poor.....
6. Average temperature.....
7. Moisture.....
8. Sweeping: Moist....; dry....; vacuum.....
9. Air intake: Ample.....; inadequate.....
10. Height of intake.....
11. Are seats adjustable to size of pupils?.....
12. Urinals, odor: Bad.....; absent.....
13. Toilet facilities: Ample.....; inadequate.....
14. Toilet paper provided: Yes.....; no.....
15. Water supply: Lake....; well....; spring.....
16. Drinking utensils: Cup.....; fountain.....
17. Pencils: Individuals..... Pens: Common.....
18. Is register signed and kept as required? Yes...; no....
19. Where is register kept?.....
20. Vaccination records complete; where kept: Yes.....; no.....
21. Regularity of health officer: Good.....; fair.....; poor.....
22. Is first school visited 9.15? Yes.....; no.....
23. Punctuality of health officer: Good.....; fair.....; poor.....
24. Regularity of nurse: Good..; fair...; poor.....
25. Quality of health officer's work: Good.....; fair.....; poor.....
26. Quantity of health officer's work: Good.....; fair.....; poor.....
27. Does principal, nurse, and health officer know where register is?.....
28. Does health officer visit each school daily?.....
29. Interest in work of health officer: Good.....; fair.....; poor.....
30. Interest of nurse in work: Good.....; fair.....; poor.....
31. Does principal get prompt notice of new cases and terminations? Yes.....; no.....
32. Is health officer inspecting parochial schools in his territory?.....
33. Is health officer doing good work?.....

..... M. D.,
Supervising Health Officer.

Date....., 19.....

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

Name..... Address.....

PHYSICAL RECORD.

Sex.....; age.....; birthplace.....
Nationality of father.....; mother.....
Number of children in family.....; history of measles.....
Diphtheria.....; pertussis.....; pneumonia.....; scarlet fever.....
School..... Vaccinated?.....
Date first examination....., 19.....

[O placed in square means absence of defects. X denotes defects.]

1. Grade.....	1	2	3	4	5	6	7	8
2. Years in school.....								
3. Revaccination.....								
4. Diseases during year.....								
5. Date of physical examination.....								
6. Height.....								
7. Weight.....								
8. Nutrition.....								
9. Anemia.....								
10. Enlarged glands.....								
11. Goitre.....								
12. Nervous diseases.....								
13. Cardial disease.....								
14. Pulmonary disease.....								
15. Skin disease.....								
16. Defect orthopedic.....								
17. Richitic type.....								
18. Defect of vision.....								
19. Other diseases of eye.....								
20. Defect of hearing.....								
21. Discharging ear.....								
22. Defect of nasal breathing.....								
23. Defect of palate.....								
24. Defect of teeth.....								
25. Hypertrophied tonsils.....								
26. Adenoids.....								
27. Mentality.....								
28. Conduct.....								
29. Effort.....								
30. Proficiency.....								
31. Was treatment advised?.....								

(Reverse side for diagnosis and treatment received.)

HEALTH OFFICER'S DAILY REPORT.

School, ... CHICAGO, ..., *191*....

Time of { Arrival, ...
Departure, ... Total number examinations, ...

Disease.	Diphtheria.	Diphtheria contact.	Diphtheria carrier.	Scarlet fever.	Scarlet fever contact.	Measles.	Measles contact.	Pertussis.	Pertussis contact.	Chickenpox.	Chickenpox contact	Smallpox.	Smallpox contact.	Mumps.	Mumps contact.	Tuberculosis.	Tonsilitis.	Acute coryza.	Trachoma.	Conjunctivitis.	Ringworm.	Impetigo.	Scabies.	Favus.	Pediculosis.	Miscellaneous.	Total.
Cases:																											
Found.....																											
Excluded.....																											

Number of vaccinations performed: Previous vaccination, ...; revaccination, ...; total, ...
Number physicals made, ... Number children found defective, ...
Number advised to seek treatment, ... Number of cultures made, ...

....., *Health Officer.*

(Reverse side for exclusions.)

DIVISION OF CHILD HYGIENE—EXAMINER'S DAILY SCHOOL REPORT AND SUMMARY.

CHICAGO, ..., *191*....

School, ... Time of {Arrival, ...
Departure, ...

Grade.	Number in grade.	Number examinations to date.	Number defective.	Recommended treatment.
1				
2				
3				
4				
5				
6				
7				
8				
Special				
Total				

....., *Health Officer.*

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

HEALTH OFFICER'S WEEKLY REPORT.

School, ... Week ended ....., 191....

Number of physical examinations, ...
Number requiring treatment, ...

Nationality of those requiring treatment.

Native born, ... Foreign born, ...
One or both parents foreign born .....

Defects found.

Nutrition.....	Vision.....
Anæmia.....	Other diseases of eye.....
Enlarged glands.....	Hearing.....
Goitre.....	Discharging ear.....
Nervous diseases.....	Nasal breathing.....
Cardiac diseases.....	Palate.....
Pulmonary diseases.....	Teeth.....
Skin diseases.....	Hypertrophied tonsils.....
Orthopedic.....	Adenoids.....
Richitic type.....	Mentality.....

....., *Health Officer.*

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DEPARTMENT OF HEALTH, CITY OF CHICAGO.

DENTAL INSPECTOR'S DAILY REPORT.

School..... CHICAGO....., *191*..
Total number examined.....
Number found to have defective teeth.....
Number needing immediate attention.....
General condition of teeth found: Good.....; fair.....; bad.....
Number of pupils applying for dispensary work.....
Remarks.....
.....
.....
..... D. D. S.

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

DENTAL DISPENSARY DAILY REPORT.

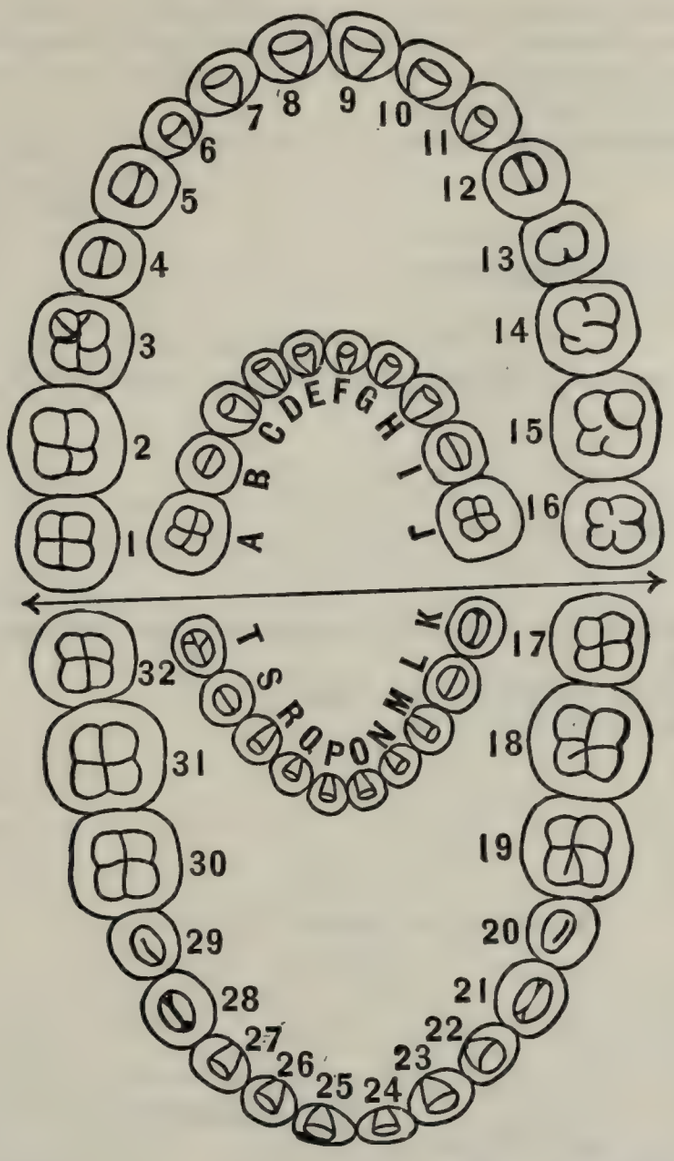
Dispensary..... CHICAGO....., *191*..

Operation.	Treatments.													Fillings.						Extractions.		Total number of operations.
	Prophylaxis.	Analgesic.	Arsenical application.	Dehydrating application.	Cocaine pressure extirpation.	Pulp capping.	Devitalized pulp removal.	Formacresol.	Sulphuric acid.	Root filling.	Counterirritant.	Abscess opened.	Surgical dressing.	Grinding unsavable root.	Amalgam.	Oxyphosphate of zinc.	Oxyphosphate of copper.	Gutta-percha.	Temporary filling.	Porcelain crown.	Permanent tooth.	Deciduous tooth.	
Number cases..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Time present..... Number patients.....
Number of new cases..... Number completed.....
Nurse in attendance.....
..... D. D. S.

DENTAL RECORD.

Name..... Address.....
School..... Grade..... Age..... Nationality.....



Condition of mouth: Good.....; fair.....; bad.....
Condition of gums: Good.....; fair.....; bad.....
Use toothbrush: Yes.....; No.....
Have teeth been filled: Yes.....; No.....
Mal-occlusion: Yes.....; No.....
Palatal defect: Yes.....; No.....
Remarks: .....
.....
.....

..... D. D. S.
Examiner.

Followed up.....
..... *Nurse.*

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

REPORT OF VACCINATIONS.

[☞This monthly report of vaccination is to be made out and forwarded to the chief medical inspector at the close of each month.]

Name of school .....
Report for the month of....., 191..
Number of tubes of glycerinated vaccine received during the month..... .....
Number of tubes of glycerinated vaccine used during the month..... .....
Total number of primary vaccinations performed (successful)..... .....
Total number of primary attempts at vaccination with failure..... .....
Total number of revaccinations performed (successful)..... .....
Total number of attempts at revaccination performed with failure..... .....
Number of previous vaccinations examined and certificates issued therefor..... .....
Kind of vaccine used and laboratory numbers of same..... .....

....., M. D.,
Medical Inspector.

DEPARTMENT OF HEALTH, CHICAGO.

To the parents of .....
(Pupil's name.)

Your child (named above) is not properly protected against smallpox. It should be vaccinated *at once.*

You owe it to your child to protect it against the most horrible of all diseases—smallpox.

Either take this child to your family doctor or give your permission to have it vaccinated (free) by the school doctor. The purest vaccine will be used.

Do you consent to having your child vaccinated by the school doctor.

.....
Answer "Yes" or "No" here.

(Sign your name here.).....

Return this card, *signed*, to the school-teacher.

(See other side.)

DIVISION OF CHILD HYGIENE—PARENT'S CONSENT CARD.

To the parents of .....

Address .....

Your child attending the.....school shows evidence of the following condition: .....

.....

.....

In the interest of the child's welfare kindly give permission to have a thorough examination of the child made by the school doctor.

Parents can be present at the examination if they desire.

Please sign this card and return it to the school.

C. B. YOUNG,
Commissioner of Health.

Parent's signature .....

DEPARTMENT OF HEALTH, CITY OF CHICAGO.

Dispensary ..... Date .....
Name .....
School ..... Room ..... No. .....

Appointment.			Leave school.	Arrived at dispensary.	Leave dispensary.	Arrived at school.	Appointment.			Leave school.	Arrived at dispensary.	Leave dispensary.	Arrived at school.
Hour.	Month.	Day.					Hour.	Month.	Day.				

BOARD OF EDUCATION, EDUCATIONAL DEPARTMENT.

No. .....

CHILD-STUDY LABORATORY.

RECORD CARD FOR CRIPPLED CHILDREN.

Name.....
Parent or guardian.....
Address.....
Nationality and language of home.....
Place of birth.....
Date.....year.....month.....day.....
Date of birth.....year.....month.....day.....
Age.....years.....months.....days.....
School.....(Teacher.....)
Name of medical examiner.....
History of case.....
Disposition of case.....

PHYSICAL CONDITION.

Vision, right eye.....
Vision, left eye.....
Hearing, right ear.....
Hearing, left ear.....
Nutrition—
  Character of skin and hair.....
  Anaemic.....
  Tongue, coated, furrowed.....
  Teeth, decayed, serrated, irregular.....
Nature of affliction:
  Tuberculosis—
    1. Pulmonary.....
    2. Glandular.....
      Sinuses, character of discharging, raw, partially healed, scars.....
    3. Osseous and arthralgic.....
      Spondylitis.....
      Hip disease.....
      Knee joint.....
      Ankle and other forms.....
      Sinuses, character of—discharging, raw, partially healed, scars.....
  Neuroses—
    1. Infantile cerebral paralysis.....
    2. Infantile spinal paralysis.....
    3. Hemiplegia.....
    4. Paraplegia.....
      Upper.....
      Lower.....
    5. Chronic hydrocephalism.....
    6. Pseudo-hypertrophy.....
  Specific.....
  Injuries and deformities.....

MENTALITY.

School standing:
  Grade.....
  Time in school.....
  Progress.....
Imitation, ability to duplicate movements and sounds:
  (*a*) Simple.....
  (*b*) Complex.....
Suggestibility, ability to express movements or thoughts from cues:
  (*a*) Immediate.....
  (*b*) Remote.....
Reproduction, immediate—sense memory:
  (*a*) Movements.....
  (*b*) Objects seen.....
  (*c*) Words seen.....
  (*d*) Numerals seen.....
  (*e*) Words heard.....
  (*f*) Numerals heard.....
Perception:
  Card sorting.....
  "A" test.....
Association and comparison; translating from one sense to another:
  Numeral-color association.....
  Numeral-symbol association.....
  Part-whole association.....
Remarks.....

BOARD OF EDUCATION, CITY OF CHICAGO.
OFFICE OF SUPERINTENDENT OF SCHOOLS.
File No. ..... Child-Study Department.

SPECIAL REPORT OF PRINCIPAL ON PUPIL RECOMMENDED FOR EXAMINATION BY THE CHILD-STUDY DEPARTMENT.

To the Superintendent of Schools:

.....*School.* .....*190..*

Character of case.....
(State whether deaf, blind, crippled, backward, imbecile, or pulmonary tuberculosis.)

Name of child.....
Parent or guardian.....
Home address.....

School history:
Age.....
Grade.....
Time in grade.....

Remarks.....
.....
.....
.....

.....

(Signed) .....
Principal.

[Data to be filled at the office of the superintendent.]

Referred to district superintendent..... .....
Date

Date returned.....Recommendation.....
.....
Referred to child-study department.....
Report of examination: By.....Date.....
.....
Recommendation.....
Disposition.....

BOARD OF EDUCATION, CITY OF CHICAGO, EDUCATIONAL DEPARTMENT.

No.———.

CHILD-STUDY LABORATORY.

By whom referred.....
Name.....
Name of parent or guardian.....
Address.....
School.....; room.....
Grade..... No. of weeks in grade.....
Teacher.....
Date.....year.....month.....day.....
Date of birth, year.....month.....day.....
Age.....years.....months.....days.....
Nationality and language of home.....
Age of brothers and school record.....
Age of sisters and school record.....
Age of brothers and sisters dead.....
Causes of their deaths.....
Health of father.....good.....fair.....poor.....
Health of mother....good.....fair.....poor.....
Age of father.....mother.....
Hygienic condition of home...good...fair...poor..
Garbage.....sewerage.....noise.....
Food..... Education of parents.....
Aesthetic and moral influence.....
Family history—neurotic..tubercular..alcoholic...
Specific.....etc.....
Development.—Dentition, 1st....., 2d.....,
walking....., talking....., fontanelles ...., control of fundamental reflexes.....

Health record:
Diseases—Measles....., mumps....., whooping cough....., scarletina....., scarlet fever....., diphtheria....., meningitis....., epilepsy....., chorea....., scrofula....., tonsillitis....., other diseases.....
Accidents and operations.....
General health tonus: Infancy.....childhood.....at present.....
Nutrition.....anaemic.....pallor.....
Skin: Dry....., moist ....., oily .....
Hair: Dry and gritty.....growth irregular ...
Circulation: Hands, cold .....purple.....

School standing:
Best work in.....; poorest work in.....
Deportment.....
Is the child lazy....., inattentive ....., dull..,
stupid....., stubborn....., unruly.....,
selfish....., untruthful....., cruel.....,
slovenly...., excitable...., ill-tempered....

Anthropometric tests:
Net height...., height sitting...., weight....
Head measurements: Length...., breadth....,
height...., circumference...., cephalic index.....
Lung capacity.....
Strength of grip: Right hand....., left hand.....
Motor ability: (*a*) Tapping rate, right hand 10s.....20s.....30s.....; left hand 10s.....20s.....30s.....

Anthropometric tests—Continued.
Observations.....
(*b*) Precision tests: Right hand....., left hand.....
Sensory tests:
Visual acuity: Right eye.....; left eye.....
Observations.....
Auditory acuity: Right ear.....; left ear....
Observations.....
Pressure threshold.....
Aesthesiometric threshold.....
Perception tests:
(*a*) Size: (1) Dermo-muscular.....; (2) muscular.....
(*b*) Form: (1) Münsterberg's touch exp .....; (2) Jastrow's sorting exp.....
(*c*) Weight: (1) Active.....; (2) passive .....
(*d*) Time: .....
(*e*) Brightness: Sorting of grays .....
(*f*) Color: (1) Least perceptible difference (reds) .....; (2) sorting colors.....
(*g*) Movement: .....
(*h*) Symbols: Marking out "A's".....
Total time.....; Accuracy.....
Motor time.....
Finding time.....
Association:
Color-numeral.....
Symbol-numeral.....
Part-whole.....
(*a*) Simple.....
(*b*) Complex.....
Attention:
Natural.....
With distraction.....
Memory tests:
(*a*) Immediate sense—
1. Numerals seen.....
2. Numerals seen and spoken.....
3. Words seen.....
4. Words seen and spoken.....
5. Objects seen.....
6. Objects seen and names spoken.....
7. Numerals heard.....
8. Numerals heard and spoken.....
9. Words heard.....
10. Words heard and spoken.....
11. Smells.....
(*b*) Associational—simple.....
(*c*) Logical.....

OBSERVATIONS.

Growth:
Obese.....
Emaciated.....
Bilateral asymmetry.....
Deformities.....
Scoliosis.....
Lordosis.....
Chest sunken.....
Hydrocephalic.....
Microcephalic.....

Growths—Continued.
Cranial asymmetry.....
Forehead retreating.....
Foorehead narrow.....
Forehead low.....
Facial asymmetry: Forehead.....; nose....; eyes....; ears....; mouth parts.....
Ears deformed.....
Dentition: Teeth irregular.....; doubled....; serrated....; pointed....; chalky.....
Palpebral fissures small.....
Nasal bones sunken.....
Adenoidic.....
Mouth breathing.....
Palate: Narrow.....; high.....; asymmetrical.....
Tongue: Thick....; flat....; pointed....; furrowed.....; papillae hypertrophied.....; coated.....
Movement:
Sluggish.....
Restless.....
Incoordinated.....
General balance relaxed.....
Asymmetrical posture.....
Asymmetrical head balance.....
Overaction of frontals .....
Corrugation.....
Incoordination of eyes.....
Relaxed orbicularis oculi.....
Hand balance: Asymmetrical.....
Tense.....
Relaxed.....
Drooped.....
Finger twitchings.....
Eyelid twitchings.....
Tongue twitchings.....
Defective speech:
Hesitation.....; lisping.....
Stammering.....; stuttering.....
Improper pronunciation of.....
General observations on mental action:
Judgment erratic.....; mind wandering.....; cholic.....; choleric.....; sanguine.....; phlegmatic.....; sullen.....; silly.....; face immobile.....; timid.....; bold.....; curious.....; indifferent.....; affectionate.....; repellant.....
Sensitivity: Good....; fair....; poor....
Perceptive ability: Good...; fair...; poor...
Memory: Good....; fair....; poor .....
Ability to reason: Good..; fair....; poor....
Mental prognosis: Good..; fair....; poor.....
Is able to work with number combinations to..
Is able to read well—fairly well—poorly—lesson .....in the.....reader.

REMARKS AND RECOMMENDATIONS.

.....
.....
.....

NEWARK, N. J.

BOARD OF EDUCATION, NEWARK, N. J.

.....*School*

To parents and guardians:

To protect the health and to secure the proper development of the child's body, the school law of the State of New Jersey and the rules and regulations of the board of education of the city of Newark require all public-school pupils to be examined by the school physician, to learn whether they have any defects of the eyes, ears, nose, throat, heart, or lungs.

To make a thorough examination of the heart and lungs it is usually necessary to remove all or a part of the clothing which covers the chest and back. This is done by the school physician with the least possible exposure of the body. In case boys or girls are timid or sensitive, they will be examined alone in the doctor's office, provided the parent wishes it In case of girls, clothing will not be removed except in the presence of a woman, mother, nurse, teacher, or clerk. *Mothers are invited to be present at the examination if they desire.*

Examinations of this kind are now quite common in all the cities of the country that are taking measures to protect the health and to improve the condition of school children.

Please state below, in the manner directed, whether you wish your child examined under the above conditions.

.....*Principal.*

Dated.....

[Parent will please fill out and return.]

I wish my child (children) examined by the school physician as above.

Yes. *No.* (Cross out either yes or no.)

(Signed) .....

Parent or Guardian.

In case no reply is received from you within two days, it is understood that you consent to having your child (children) examined.

DEPARTMENT OF MEDICAL INSPECTION, BOARD OF EDUCATION, NEWARK, N. J.

The following is a report of nurse No.....for.....191..

Schools visited.	Number of classes inspected.	Lectures delivered.	Old cases.	New cases.	Cured.	Visits to homes.		Taken to dispensary or physician.		Examinations for uncleanliness.	Pediculosis.	Causes for which pupils were treated.											Exclusions.			
						Old.	New.	Old.	New.			Acute conjunctivitis.	Scabies.	Ringworm.	Impetigo.	Favus.	Eczema.	Molluscum con.	Infected wounds.	Vaccination dressings.	Others.	Total.	Suspected contagious diseases.	Pediculosis.	Uncleanliness.	Others.

.....*Nurse.*

BOARD OF EDUCATION, NEWARK, N. J.

WEEKLY WEIGHT RECORD.

Date.	Weight.	Gain or loss.	Date.	Weight.	Gain or loss.	Date.	Weight.	Gain or loss.

SOCIAL CONDITIONS.

The home.	The family.	Economic condition.	The child.
Number of rooms..... Cleanliness: Good; fair; bad. Character: Good; fair; bad. Ventilation: Good; fair; bad. Child's sleeping room: light; fair; dim. Ventilation: Good; fair; bad. Number in rooms..... Number in bed.....	Total number: Adults..... Children..... Boarders..... Parents alcoholic: Yes; no. Illness in— Who?..... What?..... Attend clinic?.....	Rent..... Income..... Charity received..... Who works?.....	Food: What?..... Fried?..... Beverage: Tea, coffee, wine, beer, whisky. Sleep: How much..... Work: Yes; No. What? Play out; how much?... Bath: How often?.....

Action taken:
(Continued on reverse side.)

BOARD OF EDUCATION, NEWARK, N. J., DEPARTMENT OF MEDICAL INSPECTION.

PHYSICAL RECORD.

Name..... Age..... Address.....
.....School. .....Grade. .....,19..

1. Nutrition: Bad; good.
2. Enlarged cervical gland: Yes; no. Anterior; posterior.
3. Chorea: Yes; no.
4. Cardiac disease: Yes; no.
5. Pulmonary disease: Yes; no.
6. Skin disease: Yes; no.
7. Deformed spine: Yes; no. Chest: Yes; no. Extremities: Yes; no.
8. Defective vision: Right eye; left eye.
9. Defective hearing: Yes; no.
10. Defective nasal breathing: Yes; no.
11. Teeth: Bad; good.
12. Deformed palate: Yes; no.
13. Impediment in speech: Yes; no.
14. Hypertrophied tonsils: Yes; no.
15. Posterior nasal growth: Yes; no.
16. Mentality: Bad; good.
17. Treatment necessary: Yes; no.
18. Nationality.....
19. Date of your inspection.....
20. Remarks.....

Form 801 signed: Yes; no. Medical Inspector No. .....

(On reverse side: Improvement noted on reexamination.)

BOARD OF EDUCATION,
Newark, N. J., ...

The medical inspector of this school finds no evidence of successful vaccination on the person of.....

In accordance with the rules of the board of education such evidence of successful vaccination is necessary or your child can not be admitted to school.

Please have your child vaccinated at once by your family physician; or, in case you wish your child vaccinated by the medical inspector (which will be done free of charge), sign your name in the space below and return this card at once.

.....
Principal.

.....
(Signature of parent or guardian.)

BOARD OF EDUCATION, NEWARK, N. J.

PRINCIPAL'S REPORT ON MEDICAL INSPECTION.

Month ending..... .....School.
Inspector..... Absent.....Days.
Substitute inspector..... Date.....
Substitute inspector..... Date.....
Substitute inspector..... Date.....
Number of class rooms inspected..... Number of rooms fumigated.....
Number of pupils excluded by principal..... Number of visits by nurse.....
Number of lectures..... Date.....
Subject.....
Remarks.....
.....
....., *Principal.*

NEWARK, N. J., ..., 191..

The {nurse / physician} has this day visited my classroom and examined ..... pupils.

(Signed) ....., *Teacher.*

[This notice must be sent to the principal the same day inspection is made.]

BOARD OF EDUCATION, NEWARK, N. J.,
Department of Medical Inspection, ..., 191...

Principal ..... *School.*

....., residing at .....is

..... granted a permit to attend .....school beginning

..... provided an examination by the medical inspector on

{his / her} arrival discloses no evidence of disease.

....,
Supervisor of Medical Inspection.

BOARD OF EDUCATION, NEWARK, N. J., DEPARTMENT OF MEDICAL INSPECTION.

Examined in Supervisor's Office.
Accompanied by.....
Date.....

Name, ...
Address, ...
Newark, N. J.
School.....Grade.....
Age.....Vaccination inspection.....
Family history:
Mother's name.....
Father's name.....
.....
Previous history:
.....
.....
Present history:
.....
.....
(Reverse side: Physical examination.)

Physical examination:
General condition.....
Nutrition.....
Weight.....
Height.....
R. E. V.....
L. E. V.....
Ears.....
Teeth.....
Nose and throat.....
Heart.....
Lungs.....
Skin.....
Orth.....
Nervous.....
Mental status.....
Von Pirquet skin test.....Hæmoglobin
Given.....
Inspected.....
Reaction.....
Diagnosis.....
.....
.....
Prognosis.....
Recommendations.....
.....
.....
Subsequent examination .....
.....
.....
Remarks.....

BOARD OF EDUCATION, NEWARK, N. J.

School.....Room No.....
Name.....Address.....
Date..... Sent to medical inspector for.....

Diagnosis.....

Referred to—Physician or dentist—Dispensary—Nurse.

.....excluded—Date.....

Returned—Date.....

Results—Cured—Improved—Not improved.

Medical inspector.....

Treatments by nurse.....

Dates.....

Total number of treatments.....

Nurse.....

To Teacher— Diag.....
.....is referred for treatment to nurse—Dispensary or dentist—Family physician.
He (she) is.....excluded from the class room until you receive notice for his (her) return.
.....Medical Inspector.

NEWARK DENTAL CLINIC ASSOCIATION,

74 Newton Street—553 Market Street.

Name.....
Address.....
Referred by.....
School.....

[This notice does NOT exclude the pupil from school.]

BOARD OF EDUCATION, DEPARTMENT OF MEDICAL INSPECTION,

Newark, N. J., ...*19*....

The parent or guardian of.....at.....
is hereby informed that a physical examination by the Medical Inspector seems to show the following abnormal condition:

.....
.....
.....

You are requested to take this child and the card to your family physician or clinic for advice and treatment.

Medical inspector,.....

GEO. J. HOLMES, M. D.,
Supervisor of Medical Inspection.
(Filled out on reverse side by physician.)

.....*191*....

REPORT OF INVESTIGATION OF QUARANTINED PUPIL.

Name.....Address.....
Age.....Attending.....School
Nature of disease.....Date of origin.....
Relation of applicant.....Character of house.....
Number of brothers and sisters attending school.....
Physician attending patient.....
Date of last being in house of contagion.....
Intelligence and reliability of parents.....
Present address.....
Remarks.....
.....
Permit..... Date.....

.....
Sanitary Inspector.

BOARD OF EDUCATION, NEWARK, N. J DEPARTMENT OF MEDICAL INSPECTION.

HOME VISITS.

Nurse district No. .....Date.....*191*..

Name.	Address.	School.	Disease.	Time of visit.	Results.
.....	.....	.....	.....	.. a. m.	
.....	.....	.....	.....	.. p. m.	
.....	.....	.....	.....	.. a. m.	
.....	.....	.....	.....	.. p. m.	

BOARD OF EDUCATION, NEWARK, N. J.,
Department of Medical Inspection, ...*191*..

I, parent of.....living at.....herewith request that the nurse of the department of education adopt such procedures for the proper care or treatment of such diseases or defects as in her judgment are necessary for the cure of my child.

(Signed) .....

DEPARTMENT OF MEDICAL INSPECTION, BOARD OF EDUCATION, NEWARK, N. J.

INSTRUCTIONS TO PARENTS REGARDING THE CARE OF THE MOUTH AND TEETH.

The physical examination of school children shows that in many instances the teeth are in a decayed and unhealthy condition.

Decayed teeth cause an unclean mouth. Toothache and disease of the gums may result.

Neglect of the first teeth is a frequent cause of decay of the second teeth.

If a child has decayed teeth, it can not properly chew its food. Improperly chewed food and an unclean mouth cause bad digestion, and consequently poor general health.

If a child is not in good health it can not keep up with its studies in school. It is more likely to contract any contagious disease, and it has not the proper chance to grow into a robust, healthy adult.

If the child's teeth are decayed it should be taken to a dentist at once.

The teeth should be brushed after each meal, using a tooth brush and tooth powder.

The following tooth powder is recommended: Two ounces powdered precipitated chalk, ½ ounce powdered castle soap, 1 dram powdered orris root. Thoroughly mix.

This prescription can be filled by any druggist at a small cost.

The child should take the tooth brush and powder to the school and receive instructions from the nurse as to their proper use.

RINGWORM.

Directions: Remove the scales with soap and warm water. Dry thoroughly and apply the medicine morning and night until disease is cured.

[To be filled at a drug store.]

℞

Tincture of iodine..... 10
Alcohol..... 20

M. Sig. Apply once a day until the disease has disappeared.

The following method of treatment for the itch is recommended:

Before going to bed wash the body well with soap and hot water, and when dry rub this ointment *thoroughly,* 20 minutes, over the whole skin. Do not bathe for three days. All bedclothing and clothes that have been worn next the skin must be boiled before using again.

[To be filled at drug store.]

℞

Sulphur..... 7.50
Beta naphthol..... 7.50
Lard q. s..... 90

M. Sig. Apply as directed.

CONTAGIOUS IMPETIGO.

Directions: Wash the affected parts with warm water and soap. Apply the ointment morning and night until the disease has disappeared.

[To be filled at a drug store.]

℞

Resorcin..... .15
White precipitate..... .50
Lard q. s..... 15

M. Sig. Apply morning and night until the disease is cured.

BOARD OF EDUCATION, NEWARK, N. J.

RECOMMENDATION FOR SPECIAL CLASS FOR MENTALLY DEFECTIVE CHILDREN.

Child's name ....
(Family.) (Given.)
..... Grade. .....School. .....Principal.
Birth: Date..... Place .....
Order.....Boy. Girl. White. Colored.
Parent's name..... Residence.....
Occupation..... Birthplace..... Educated. Can read and write. Illiterate.
Date of examination..... Examined by.....
Mental development as indicated by test..... years. Age, ... years.
Family history:
Medical—Feeble-mindedness, insanity, nervous disorder, alcoholism, tuberculosis, sickness or accident to mother before birth of child.
Social—
Financial—Well-to-do, moderate, poor.
Housing—
Entire house, number of rooms .....
Apartment, number of rooms .....
Tenement, number of rooms .....
Home treatment—Good care, neglect, brutality.
Number of normal—Living, dead. Feeble-minded—Living, dead.
Brothers ..... Sisters .....
Personal history and characteristics:
Medical—
Injury to head—At birth; after birth.
Acute illness—Scarlet fever, diphtheria, meningitis, convulsions, early malnutrition.
Bad companions, truant, lies, cheats, steals, profane, smokes cigarettes, vicious habits.
Dependable, willing and tries, good natured, affectionate.
Apathetic, restless, mischievous, quarrelsome, obstinate, incorrigible, marked peculiar traits.
Nervo-muscular coordination:
Speech—Clear, indistinct, thick, inarticulate, fluent, slow, hesitating, mute, lisp, stammer.
Facial expression—Intelligent, stupid, happy, sullen, animated, apathetic, nervous.
Posture—Stooping, erect, spinal curvature.
Gait—Normal, lively, shuffling, unsteady, clumsy.
School history:
Schools attended—City, country, or institution (specify).
Standing—Months in present grade..... Months in preceding grade ..... Prospects of promotion—Good, fair, poor, none.
Attendance—Regular, irregular, punctual.
Arithmetic—Good, fair, poor.
Writing—Good, fair, poor.
Spelling—Good, fair, poor.
Reading—Good, fair, poor.
Language—Good, fair, poor.
Drawing—Good, fair, poor.
Attention—Good, poor.
Memory—Good, poor. Common sense.
Physical condition—Height ..... inches. Weight ..... pounds. Miscellaneous .....

Medical inspector's last record.

Eyes.	Ears.	Nose.	Throat.	Skin.	Orth.	Nervous.	Teeth.	Nutrition.

Remarks .....

To the principal: Kindly see that the above form is filled out as accurately as possible. The data may be obtained from parents, children, and teachers, as well as from your personal knowledge of the case.

Please underline the descriptive words applicable to this case, and return the blank as soon as possible to the city superintendent of schools.

Present examination by committee.

Eyes.				Ears.	Nose.	Throat.	Skin.	Orth.	Nervous.	Teeth.	Nutrition.	Miscellaneous.
V. R.	V. L.	H. F. R. L. sq.	Glasses date child.									

Diagnosis:
Degree of mentality—Dull, backward, backward-emotive, feeble-minded, imbecile, idiot.
Etiology.....
Recommendations: Medical, social, educational, special class for backward—feeble-minded—disciplinary cases.

RECORD BLANKS FOR REVISED BINET TESTS.

DEPARTMENT OF RESEARCH TRAINING SCHOOL, AT VINELAND, N. J.

Name..... Born..... Admitted.....

Examined..... .....Mental age.....

III.

1. Points to nose, eyes, mouth.
2. Repeats "It rains. I am hungry."
3. Repeats 7 2.
4. Sees in picture 1. , 2. , 3. , 4. , 5. , 6. , 7. , 8. .
5. Knows name.

IV.

1. Knows sex, boy or girl (girl or boy)
2. Recognizes key, knife, penny.
3. Repeats 7 4 8.
4. Compares lines.

V

1. Compares 3 and 12 grams. 6 and 15 grams.
2. Copies square (draw on back of this sheet).
3. Repeats, "His name is John. He is a very good boy."
4. Counts four pennies.
5. "Patience."

VI.

1. Morning or afternoon (afternoon or morning).
2. Defines fork, table, chair, horse, mama.
3. Puts key on chair; shuts door; brings box.
4. Shows right hand; left ear.
5. Chooses prettier? 1 and 2. 4 and 3. 5 and 6.

VII.

1. Counts 13 pennies.
2. Describes pictures. (See III 4).
3. Sees picture lacks eyes, nose, mouth, arms.
4. Can copy diamond (over).
5. Recognizes red, blue, green, yellow. (Time 6″.)

VIII.

1. Compares (time 20″) butterfly, fly, wood, glass, paper, cloth.
2. Counts backward 20–1 (time 20″).
3. Repeats days. M. T. W. T. F. S. S. (Time 10″.)
4. Counts stamps. 111222 (time 10″).
5. Repeats 4 7 3 9 5.

IX.

1. Makes change 20c.—4c.
2. Definitions (see VI 2).
3. Knows date.
4. Months. J. F. M. A. M. J. J. A. S. O. N. D. (time 15″).
5. Arranges weights (2 correct) 1′ each). 1. 2. 3.

X.

1. Money 1c. 5c. 10c. 25c. 50c. $1. $2. $5. $10.
2. Draws design from memory (show 10 seconds).
3. Repeats 8 5 4 7 2 6. 2 7 4 6 8 1. 9 4 1 7 3 8.
4. Comprehends:
   1st series time 20″ (2 out of 3)—(*a*) missed train, (*b*) struck by playmate, etc., (*c*) broken something.
   2d series time 20″ (3 out of 5)—(*a*) late to school, (*b*) important affair, (*c*) forgive easier, (*d*) asked opinion, (*e*) actions *v.* words.
5. Sentence: Philadelphia, money, river. (Time 1′).

XI.

1. Sees absurdity (3 out of 5) (time 2′): (*a*) Unfortunate painter, (*b*) three brothers, (*c*) locked in room, (*d*) railroad accident, (*e*) suicide.
2. Sentence: Philadelphia, money, river (See X 5.)
3. Gives sixty words in three minutes (record on back).
4. Rhymes (time 1′ each) (3 rhymes with each word): Day, spring, mill.
5. Puts dissected sentences together. (Time 1′ each): a. b. c.

XII.

1. Repeats 2 9 6 4 3 7 5. 9 2 8 5 1 6 4. 1 3 9 5 8 4 7.
2. Defines charity, justice, goodness.
3. Repeats, "I saw in the street a pretty little dog. He had curly brown hair, short legs, and a long tail."
4. Resists suggestion (Lines). 1. 2. 3. 4. 5. 6.
5. Problems: (*a*) Hanging from limb; (*b*) neighbor's visitors.

XV.

1. Interprets picture.
2. Change clock hands. 6.20= 2.56=
3. Code. Come quickly.
4. Opposites: (1) good, (2) outside, (3) quick, (4) tall, (5) big, (6) oud, (7) white, (8) light, (9) happy, (10) false.

ADULT.

1. Cutting paper.
2. Reversed triangle.
3. Gives differences of abstract words.
4. Difference between president of a republic and a king.
5. Gives sense of a selection read

STATE REGULATIONS OF NEW JERSEY.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

DIVISION OF MEDICAL AND SANITARY INSPECTION.

RECORD OF SA ITARY INSPECTION OF SCHOOL BUILDING.

1. Name of school buil ling.....
2. Location.....; town.....; county.....
3. School district.....
4. Name aud post-office address of principal.....
5. Na ne and address of secretary of the board of e lucation or district clerk.....
6. Total number of classrooms.....
7. Enrollment of pupils.....; average daily attendance.....
8. Size of lot.....
9. Surface covered by buildings.....
10. Height of building.....
11. Date of erection.....
12. Material of construction.....
13. Nearness and height of surrounding buildings.....
14. Fire escape on building.....
15. Yard, for what purpose used.....
16. Privy vault on pre nises.....; size.....; location..... condition.....
17. Jesspool.....; construction.....; condition.....
18. Any objectionable accumulation on premises or adjoining premises?.....

CELLAR.

19. Cellar under entire buil ling.....
20. Depth beneath ground surface.....
21. Material an l condition of cellar bottom.....
22. Number an l size of windows.....
23. Is cellar well lighted?.....
24. Is cellar damp?.....

PLUMBING, DRAINAGE, AND WATER-CLOSET APARTMENTS.

25. Is building connected with sewer?.....
26. Any leaks or defects noted in drains?.....
27. Size and location of water-closet apartments.....
28. Material and condition of floors.....
29. Number and size of windows opening to outer air.....
30. Ventilation of apartment.....
31. Cleanliness of apartment.....
32. Number and style of water-closets.....
33. Are water-clo ets in good repair?.....
34. How flushed.....

35. Number and style of urinals.....
36. Are urinals in good repair?.....
37. How flushed?.....
38. Cleanliness of fixtures.....
39. Any disinfectant or deodorant used in fixtures or apartment?.....; kind.....
40. Are there facilities for pupils to wash hands after using closets or urinals?.....

HEATING, LIGHTING, AND VENTILATION.

41. Method of heating.....
42. Method of lighting.....
43. Method of ventilation.....
44. Location of fresh-air intake.....
45. Size and construction of fresh-air duct.....
46. Any visible sources of contamination of fresh-air supply?.....

WATER SUPPLY.

47. Source of water supply.....
48. Is water supply delivered through tank?..... Location.....; condition.....
49. Location of well.....
50. Is well driven or dug?.....
51. Depth.....; how covered.....
52. Surroundings.....
53. Sample taken.....; number.....; result.....
54. Are drinking cups used in common?.....
55. Are there drinking fountains in building? Number.....; location.....

HALLS.

56. Length.....; width.....; height.....
57. Exits.....
58. Light.....
59. Ventilation.....
60. Do doors swing in or out?.....
61. Cleanliness of hall.....

CLASSROOMS.

62. Designate room.....; grade.....; total enrollment; greatest average attendance for any preceding month.....
63. Size: Length.....; width.....; height.....; cubic contents.....
64. Square feet of floor space per pupil.....
65. Cubic feet of air space per pupil.....
66. Number and size of windows.....
67. Percentage of light to floor space.....
68. Light enters from east, west, north, south.....
69. Are there window shades to control volume of light?.....
70. Desks face east, west, north, south.....
71. Color and finish of ceiling and side walls.....
72. Do doors swing in or out?.....
73. If swinging doors, have they plate-glass panels?.....
74. Style of desks and seats.....
75. How frequently are seats and desks adjusted to pupils?.....
76. Adjustment at time of inspection.....
77. Material of construction and condition of floor.....
78. Number, size, and location of fresh-air inlets in classroom.....
79. Number, size, and location of vitiated air outlets.....
80. Amount of fresh air entering through inlets per minute.....
81. Temperature of air at inlet.....; outlet.....; at breathing line.....
82. Humidity of air in room.....
83. Was air tested for CO_2?.....; result.....; at what time.....
84. Weather conditions and temperature of air out of doors.....
85. Objectionable odors noted in air in classroom?.....
86. Are furnishings and ledges free from dust?.....
87. Any facilities for washing hands?.....
88. Are clean towels and soap provided?..... Kind of towels.....
89. Are slates used by pupils?.....; if so, how cleaned?.....
90. Are individual pencils and penholders used?.....

91. Are pencils and penholders distributed and collected daily?..... Are they disinfected after each collection?..... How?.....
92. Location of cloak room.....
93. Separate compartment for each pupil?.....
94. Light and ventilation of cloak room.....
95. Is approach to fire escape clear?.....

MEDICAL INSPECTION.

96. Name and address of medical inspector.....; date of appointment.....
97. Frequency of inspector's calls.....
98. Has board of education adopted rules for guidance of medical inspector?.....
(Procure copy if available.)
99. Are blank forms used by medical inspectors in making records?.....
(Procure copy if available.)
100. Number of lectures given before teachers by medical inspector during each term.....
101. Are unvaccinated pupils or teachers permitted to attend school?.....
102. Number of unvaccinated pupils in school.....; teachers.....
103. Are pupils or teachers residing in dwellings in which infectious disease exists excluded from school?....
104. Are pupils and teachers required to present a written permit upon return to scho l after exclusion on account of infectious disease?..... Who issues permit?.....

JANITORIAL SERVICE.

105. Method, frequency, and time of sweeping classroom floors.....
106. How is dust removed from furniture and ledges?.....
107. Are floors oiled?.....; how frequently.....
108. Method and frequency of scrubbing floors.....
109. Method and frequency of cleaning desk tops, chairs, handrails, door knobs, and casings.....
110. Method of disinfecting schoolrooms after a case of infectious disease occurs.....; by whom performed?.....
111. Describe any appliances for disinfecting kindergarten equipment.....
112. How frequently used?.....
113. Has school a gymnasium?..... Are there special instructors?.....
114. Any facilities for bathing?.....; describe them.....

Date.....

....., *Inspector.*

AMERICAN SCHOOL HYGIENE ASSOCIATION.

QUESTIONNAIRE.

[Prepared by the committee on the status of medical inspection of the American School Hygiene Association.[1]]

1. Is there any organized system of medical inspection of school children in your town?
2. Does this embrace inspection of children for the detection of (*a*) contagious disease, and (*b*) remediable physical and hygienic defects?
3. Do you follow up cases of contagious disease, remediable physical defect, and hygienic imperfection?
4. What per cent of children thus followed up receive legitimate treatment by reputable physicians?
5. State the number of schools under supervision.
6. Give the total population of all schools.
7. How many schools are visited daily by the medical inspector?
8. Are parochial, private, or any other than public, supervised by the medical inspector?
9. What is the average number of children under the supervision of one inspector, and how often are the individual children seen by the inspector?
10. Does the city provide free baths in the school buildings or in other places for the use of the school children.
11. How extensively are these baths used, and what is their sanitary supervision?
12. Do the medical inspectors visit the homes of absentees to learn the reason of their absence?
13. Do the pupils provide their own writing utensils?
14. How are the materials, as pencils, paper, clay, books, etc., collected and stored in the classroom?

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[1] *See* American medical association. Committee on medical inspection of schools. *Its* Journal, 57: 1751–57, Nov. 25, 1911.

15. Are the books of one pupil disinfected before being passed on to another pupil? If so, how?
16. What disposition is made of school books and other material which has been used by a child ill with contagious disease or used in a family where contagious disease existed?
17. Is there any systematic vaccination of school children by medical inspectors in the schools?
18. Is a certificate of successful vaccination required before child is allowed to enter school?
19. Does the city conduct a system of nursing?
20. What are the duties of the nurse?
21. How many schools does a single nurse cover?
22. What is the average number of children assigned to a nurse?
23. What is the area covered by a nurse?
24. Does the nurse or teacher in any way perform the functions of the medical inspector?
25. Is there any system of permanent record of the physical condition of a child kept in the school?
26. Is the medical supervision of school children under the department of health or the department of education, or established by private philanthropy?
27. If in the department of education, in what division—physical education, or school hygiene or other department?
28. What is your individual estimate of the value of medical inspection of school children in (1) improving the hygienic conditions at school, (2) improving the school efficiency of the children; (3) improving the attendance, (4) improving the morale of the school community, with particular reference to truancy, incorrigibleness, etc.?
29. Will you please cite any remarkable instance of improvement in the school children after physical or hygienic defects have been remedied?
30. What instruction does your system give in oral hygiene and constructive dental work? What cooperation do the local dentists afford?

AMERICAN ACADEMY OF MEDICINE.

HEALTH SURVEY OF PUPILS, TO BE MADE BY THE TEACHER AT THE BEGINNING OF THE TERM.[1]

A. General Appearance.

1. Is the child healthy appearing?.....
2. Is the color good?.....
3. Is he physically well developed?.....
4. Is he free from apparent deformities?.....
5. Has he a good standing posture?.....
6. Has he a good sitting posture?.....
7. Are the shoulders even?.....
8. Does the child walk normally?.....
9. Are the heels of the shoes worn evenly?.....
10. Is the physiological age of the child apparently equal to his chronological age?.....

B. Mental Conditions.

1. Is the child normally advanced in school?.....
2. Is he mentally alert?.....
3. Does he answer ordinary questions intelligently?.....
4. Does he play normally?.....

C. Nervous Conditions.

1. Is the child good tempered?.....
2. Is he free from abnormal emotions?.....
3. Does he have good powers of muscular coordination?.....
4. Is the child free from spasmodic movements?.....
5. Is he free from the nail-biting habit?.....
6. Does he speak without stammering?.....
7. Is he free from pronounced peculiarities such as irritability, timidity, embarrassment, cruelty, moroseness, fits, general misbehavior, etc.?.....
8. Is he apparently free from bad sexual habits?.....
9. Is he free from so-called "bladder trouble" (requests to "go out")?.....
10. Is he usually free from headache?.....

---

[1] Reprinted as an outline for the health grading of the school child. *See* Hoag, E. B. The teacher's relation to health supervision in schools, etc. American academy of medicine. Bulletin 13: 127–134, June, 1912.

D. Teeth.

1. Are the teeth clean?
2. Are the teeth sound?
3. Are the six-year molars in good condition?
4. Has the child been to a dentist within six months?
5. Are the teeth regular?
6. Does the child use a toothbrush every day?
7. Are the gums free from abscesses?
8. Are the gums healthy looking?
9. Are the upper teeth straight (not prominent)?
10. Have decayed teeth been filled?

E. Nose and Throat.

1. Does the child breathe with the mouth closed?
2. Is he free from nasal discharge?
3. Is he free from "nasal voice"?
4. Has he a well-developed face?
5. Has he a well-developed chin?
6. Has he straight, even teeth?
7. Is the child mentally alert?
8. Is he usually free from sore throat?
9. Is the hard palate wide (not high and narrow)?
10. Is the hearing good?

F. Ears.

1. Does the child usually answer questions without first saying "What"?
2. Is he fairly attentive?
3. Is he fairly bright appearing (not stupid)?
4. Does he have a voice with good expression (not expressionless)?
5. Does he spell fairly well?
6. Does he read fairly well?
7. Is he free from earache?
8. Does he hear a watch tick as far as the average child?
9. Is he free from ear discharge?
10. Is he free from any peculiar postures which might indicate deafness?

G. Eyes.

1. Are the child's eyes straight?
2. Is he free from chronic headache?
3. Does he do his work without fatigue?
4. Is he free from squinting or frowning?
5. Is the child free from postures which might indicate eye defects, such as leaning over too near the desk, holding the head on one side, etc.?
6. Are the eyes free from redness and discharge?
7. Are the eyelids healthy looking?
8. Can the child read writing on the board from his seat?
9. Have the eyes been tested separately with the Snellen test type?

H. Communicable Diseases of the Skin.

1. Is the head free from any signs of disease (lice, ringworm)?
2. Is the skin of the face, hands, wrists, forearms, chest, free from red, somewhat circular patches (ringworm)?
3. Is the skin of the face, hands, and forearms free from infected spots with crusts and pus (impetigo)?
4. Is the child free from red scratched lines and spots on the hands, wrists, forearms, chest, and between the fingers (itch)?

I. Eruptive Children's Diseases.

Is the child free from the following general early indications of contagious diseases?

1. Flushed face
2. Lassitude
3. Vomiting
4. Eruptions
5. Congested eyes
6. Discharging eyes
7. Nasal discharge
8. Persistent cough
9. Scratching
10. Sleepiness

APPENDIX B.

(See p. 34.)

SHAWAN, Jacob Albright. School activities in relation to children's eyes. *In* National education association of the United States. Journal of proceedings and addresses, 1911. Published by the association, 1911. p. 1063–70.

A résumé of information being gathered through questionnaire sent out by N. E. A. Committee appointed at the Boston meeting of the Department of special education, 1910, "to study and report on the conservation of vision. This committee consists of an ophthalmologist, a psychologist, an illuminating engineer, a publisher, and a superintendent of schools. Its object is to study not only school conditions with reference to the use and abuse of vision, but other conditions. . . . The committee has so far planned to investigate the following phases of the subject: 1. The physiology and pathology of vision. 2. Illumination, both natural and artificial. 3. Objects of vision, including books, writing tablets, blackboards, etc. 4. The psychology of vision, especially with reference to conduct. 5. The legal aspects of the problem of the conservation of vision with special reference to legislative regulations.

"This paper is . . . a partial report of one member of the committee and is confined to one phase of the subject.

"A comprehensive questionnaire has been prepared and 3,000 copies sent to superintendents and principals of schools in the United States. . . .

"Out of 736 answers . . . 456, or 59 per cent, have the eyes of children examined periodically. . . . Out of 504 answers, the following facts are deduced: 326, or 42 per cent, of the examinations were made by teachers; 138, or 17.7 per cent, of the examinations were made by physicians; 30, or 3.9 per cent, of the examinations were made by teachers, physicians, and ophthalmologists; 10, or 1.5 per cent, of the examinations were made by ophthalmologists and specialists."

Summary:

"*First*, light should be admitted to the schoolroom from the left of the pupils with a window space equal to not less than one-fifth of the floor surface.

"*Second*, a shiny surface, whether the blackboard or printed page is injurious and should be avoided.

"*Third*, the type used for printing school books should be large and clear.

"*Fourth*, the amount of work requiring pencil or pen should be limited.

"*Fifth*, correction of the differences in refractive power of the two eyes should be discovered and promptly made by the use of proper glasses.

"*Sixth*, where the power of vision is limited it should be conserved and developed by proper eye-training, either by segregation or by the omission of certain subjects of study."

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UNITED STATES BUREAU OF EDUCATION
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A TRADE SCHOOL FOR GIRLS

A PRELIMINARY INVESTIGATION IN A TYPICAL MANUFACTURING CITY WORCESTER, MASS.

BY THE RESEARCH DEPARTMENT OF THE WOMEN'S EDUCATIONAL AND INDUSTRIAL UNION OF BOSTON. UNDER THE DIRECTION OF SUSAN M. KINGSBURY AND MAY ALLINSON

WASHINGTON
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INTRODUCTION.

This study of the needs and possibilities of the industrial training of girls and women by the city of Worcester, Mass., was made in the spring and summer of 1911. Three cities, Worcester, Cambridge, and Somerville, through their respective school committees, expressed a willingness to establish trade schools for girls and asked the State board of education through its agents to aid them in the task of setting up the kind of school which would best meet the vocational needs of the female wage earners and receive the approval of the State board of education for State aid under the Massachusetts statutes.

The board having no force available for carrying on such an investigation, the service of the research department of the Women's Educational and Industrial Union was secured, and a thorough study of the conditions to be met and the kind of schools that needed to be adopted in order to meet them was carried on by this department under the direction of Dr. Susan M. Kingsbury, ably assisted by Miss May Allinson and a corps of young women who, through fellowships awarded by the union, were fitting themselves for social research.[1] The reports resulted in the establishment of trade schools for girls which are now in successful operation in the three cities.

The conditions at Worcester were somewhat more favorable for the research work, and the report upon that city was fuller and perhaps, on the whole, more thoroughgoing. It is presented herewith.

The publication of this material is timely. Communities which are about to engage in vocational education would do well to remember David Crockett's maxim, "Be sure you're right; then go ahead." The task of training young people to meet the varied and complex demands of trade, and of fitting them at the same time for good citizenship, is not a simple one; it is most difficult. We know very little about the industrial conditions under which young people work, and probably less about the things that they need to know in order to be successful in their work. The Worcester report indicates the many problems that need to be taken into consideration in setting up a course of study and a scheme of training for any group of female

[1] Miss Mary Rock, Miss Lorinda Perry, and Miss Elizabeth Riedell held the fellowships for the year 1910–11.

wage earners. Every city in the country, at least of any size, needs to some extent at least just the kind of investigation that Worcester made before entering actively upon the task of establishing vocational schools of any kind.

In addition the report is valuable and timely in pointing out (1) the relationship of the public schools to the problem of industrial efficiency; (2) the responsibility which the regular schools must assume for the vocational welfare of the retarded child who leaves the schools at or about the age of 14, below grade, undirected, and unprepared for life work; (3) the different questions, topics, or problems connected with the employment of girls, particularly those who are engaged temporarily in low grade, skilled, and unskilled industries which need to be investigated; (4) the method which should be employed in order to secure facts through the public school system, through the officer who issues working certificates, and through the factories in which the girls are employed; (5) the way in which an investigator familiar with the problems of industrial education draws conclusions from the data which have been gathered and shapes them into recommendations as to the kind of school and the course of study which the situation requires.

Like all studies which have to do with young wage earners, this report adds, and adds in an effective way, to the information which has been so rapidly accumulated within the past two or three years concerning (1) the great army of young girls who go out to employment as soon as they have passed beyond the reach of the compulsory law; (2) the number of girls and women who are employed in undesirable industries; (3) the lack of opportunity for advancement and better wage earning which confronts the average female wage worker; (4) the low intellectual status and ideals of the typical factory girl; (5) the kinds of industries which retarded and backward girl pupils enter; (6) the instability of female as well as male workers in many industries; (7) the fluctuating character of their employment, and (8) the low wage which most of them are able to earn. Worcester is a typical manufacturing city. If there is any difference, its conditions are better than those usually encountered in the industrial centers of this country. The situation which this report uncovers there may be regarded as being on the whole no worse, certainly, than that to be found anywhere in industrial America.

One of the most helpful things which this report does is to call attention to the fact that the character of the trade school established for girls in any city must be entirely dependent upon the conditions which it must face. There has been danger that, carried away by the splendid success of the Manhattan Trade School for Girls in New York and the Boston Trade School for Girls, places of less size and with far different problems might blindly duplicate the organization

and the courses of study of these two institutions. The proximity of the three cities, particularly Cambridge and Somerville, to the city of Boston, and the intimate knowledge which Dr. Kingsbury and her associates had of the shops and factories in Boston and of the history and service of the Boston Trade School for Girls, made it possible for them constantly to point out the differences between Boston and the three cities which were investigated, and the differences between what Boston must do through its trade school for girls and what should be done by Worcester, or Cambridge, or Somerville.

We need more reports like this, but to be effective they must be made by those who have had some contact with vocations and with vocational education. The demand for this kind of work is growing. Unhappily, there are few indeed who can combine with the investigator's skill the knowledge of what to investigate, how to investigate it, and how to interpret the facts gathered. The rapid development of vocational education and vocational guidance is opening a new field of social research. The harvest is ripe, but the laborers few.

C. A. Prosser,
Secretary National Society for the Promotion of Industrial Education.

A TRADE SCHOOL FOR GIRLS: A PRELIMINARY INVESTIGATION IN A TYPICAL MANUFACTURING CITY, WORCESTER, MASS.

PREFATORY NOTE.

The movement for trade training for girls has been growing rapidly in Massachusetts since the first commission on industrial and technical education made its report to the legislature in 1906. In the fall of 1911 three cities—Worcester, Cambridge, and Somerville—were seeking State aid in the establishment of a public trade school for girls.[1] The board of trustees of the independent industrial schools in Worcester and the superintendents of schools in Cambridge and Somerville headed the movement in their respective cities.

The State board of education, as well as the local boards, realized the necessity of knowing local conditions and needs in each individual city before definite action is taken in establishing such a school. They faced three main questions when contemplating the establishment of a trade school: First, what is the need of a trade school for girls? Second, what kind of a trade school should be established? Third, what would be the probable number and the personnel of the prospective students of such a school? The answer to the first question necessitated a study of what girls are doing after they leave school, and the corresponding home conditions. The second question could be answered only after discovering where and what were the demands for young girl workers. The third question required a knowledge of social conditions of the home, ambitions of the parents, and educational advancement of the children.

The State board of education, therefore, called in the aid of a department of research for information along these lines. It was arranged that one investigator should spend the month of November in each of the three cities, believing that enough information could be secured within one month to meet the immediate problems which confronted the school authorities. Delays in securing the cooperation of the various assisting agencies, and the large field to be covered extended the study to 5 weeks in Somerville, 6 weeks in Cambridge, and 9 weeks in Worcester.

[1] An act to establish the commission on industrial education, 1906, ch. 505, provides for State aid in the establishment of local public trade schools under certain required conditions of cooperation.

The field work of the investigator had two phases—visits to industrial establishments and visits to the homes of 14 to 16 year old girls who had left school to go to work in the past year. The short time allotted to the investigation necessitated the employment of short-cut methods, which might not be advisable in a more extensive study, but which proved sufficient to supply the needed information for the problems at hand. The knowledge of industrial conditions was obtained by visits to a representative number of typical establishments in the various industries of each city. The knowledge of social and economic conditions necessary to explain the large annual exodus of girls from the schools was obtained by the study of home and school conditions of one year's outgoing group, or only a part of the group in the larger city of Worcester. Moreover, the limited time did not permit interviews with the girl herself. The home was visited, but the desired information was secured from the parent.

The first step in the study of industrial conditions was to secure a knowledge of the women-employing industries and to choose representative establishments. This task was greatly simplified by the courtesy of Chief Whitney, of the district police, who granted access to the reports of the factory inspectors. Through these records it was possible to gain some conception of the size and importance of various establishments and to make corresponding selections. With such a basis, the type study may be said to represent conditions fairly.

The initial stages of the investigation of 14 to 16 year old girls leaving school were worked out in the public schools. Several hundred individual schedules drawn up by the deputy commissioner of education were sent to the schools to be filled out by the teachers from the school records, in accordance with directions issued by the deputy commissioner. The investigator completed the schedule by visits to the homes.

The reports of the investigation in the three cities reveal certain points of similarity and certain points of dissimilarity. The points of similarity seem to prove that certain uniform conditions exist, and may, therefore, be accepted as typical of the educational and industrial situation throughout the State, especially as they are distinctly confirmatory of the conclusions reached by the commission on industrial and technical training in 1906. The points of dissimilarity prove the imperative need and value of local studies wherever trade training is contemplated.

The fundamental facts which the similarity of conditions proves may be stated as follows:

The large factories or mills are receiving the great majority of 14 to 16 year old girls who are leaving school to go to work in our State.

The number of 14 to 16 year old girls leaving school to go to work is increasing. The records of Worcester and Somerville[1] show a marked increase in the past five years. The percentage of girls going to work is much greater than the percentage of increase in population.

The majority of young girls who leave school to go to work are only 14 years of age. They are dropping out, therefore, as soon as the law allows. Sixty per cent of such girls in Worcester, Cambridge, and Somerville in the school year of 1909–10 were 14 years of age.[2] Does this mean that the majority have completed the work of the grammar school? Does it mean that severe economic pressure is driving 14 year old girls to work?

The work offered in the grammar schools has been completed by only a small proportion of the 14 to 16 year old girl workers in each of the three cities. Thirteen per cent of the girls from the Somerville schools graduated. Seventeen per cent, so far as the Worcester records enlighten us, completed the ninth year. Twenty-three per cent of the girls from the public schools of Cambridge had graduated, but total returns, including girls from the parochial schools, would probably lower this percentage. The proportion of girls who left school having completed the grammar grades in these three cities in 1910, therefore, agrees very closely with the proportion, one-sixth, discovered throughout the State in 1906.[3]

There is a large loss of girls in the sixth and seventh grades. A large number have then reached the age of 14 and can secure working papers. One-third of the girls who left the public schools of Cambridge and all the schools of Worcester dropped out in the sixth and seventh grades. A much larger proportion, two-thirds, dropped out of the sixth and seventh grades of the Somerville schools. Forty-three per cent dropped out of the sixth and seventh grades throughout the State in 1906, according to the State study based on 5,447 children.[4] The length of schooling or the completion of the grammar grades, therefore, is not necessarily the determining factor in the large outgo of girls from the grammar schools.

Who decides that the child shall leave school? Is economic pressure in the home driving the girls of 14 to 15 into the factories and mills? Because of the limited time for the study, it was deemed impracticable and unnecessary to go into details regarding the economic status of the family. Questions as to exact incomes and

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[1] Comparative statistics could not be secured for Cambridge, as the age and schooling certificates previous to September, 1909, had not been preserved.

[2] This percentage is, however, based on different figures in each of the three cities. The total number of certificates issued to 14 to 16 year old girls in Worcester was about 700, Somerville, 251. The percentage for Cambridge considered 236 girls reported by the public schools. Certificates were issued to 452 girls from 14 to 16, of whom 243 were from the public schools and the remainder from parochial schools. The records had not been kept and hence were not available.

[3] Report of the Commission on Industrial and Technical Education, 1906, p. 85.

[4] Ibid., 103.

rents were not attempted. Questions, however, were asked regarding the occupation of father, mother, and other members of the family, character of these occupations, illness, home conditions, and the opinion of the parent—which was checked up by that of the investigator—as to ability to give the girl longer schooling. These detailed statistics were secured for the State in 1906 by the commission on industrial and technical training. The investigation of 1906 was a more statistical study, and it covered a much wider area. The present studies were less statistical, but intensive in particular local areas. By carefully checking up conclusions deduced from the present study with those gained from the study of 1906, the director of the investigation has felt justified in presenting the conclusions reached.

Fully 50 per cent of the 14 to 16 year old girls studied[1] in each of the three cities did not leave school because of economic pressure. In 1906 it was found that 76 per cent of the children studied in all parts of the State were economically able to have had further schooling, if persuaded of the advantage.[2] The percentage which has been deduced in the present studies is very conservative for two reasons: First, because the conclusion was based on general rather than detailed statistical information; second, because it was deemed advisable to report a conservative number of possible prospective students.[3]

The 14 to 16 year old girls who go to work, with very few exceptions, enter unskilled industries which offer little or no opportunity for rise or development. The instability of these young workers is a universal problem in all three cities. The elementary processes which occupy young or inexperienced workers are purely mechanical. The work of the beginner, even in the better trades, does not afford training or working knowledge of the more skilled work. The work in unskilled trades points to nothing higher or better. The work is monotonous, easily learned, and the maximum pay, which is small, is soon reached. The beginner becomes discouraged with the lack of opportunity for advancement and determines to try something else. She drifts from place to place and never becomes proficient in any one thing. "One-half the girls," remarked the superintendent of the largest corset factory in Worcester, "get discouraged before they reach the point of maximum speed, and quit when they are probably just about to strike a paying point." A large rubber factory in Watertown (adjoining Cambridge) which employs 1,600 workers at any one time reports that 4,500 were enrolled on the pay

[1] Worcester—314 of the total 727 were followed up; 214 were located and interviewed. Cambridge—236 of the total 243 leaving the public schools were followed up; 187 were located and visited. Somerville—146 of the total 251 were located and visited.

[2] Report on Industrial and Technical Education, p. 92.

[3] For this reason the total number studied, rather than the number reporting on a specific question, has been used throughout as the basis for computing percentages.

roll in the past year. A jewelry factory in Somerville reports that 5 out of every 6 workers leave in a year; another says the whole force shifts every year. Employers in all three cities say that a large proportion of the workers is continually fluctuating. The monotonous repetition of work, inability to meet the demands of the trade, inefficiency, discouragement, and the seasonal fluctuation are producing an army of fluctuating, unskilled, low-paid workers which involves many industrial, economic, and social complications. Large establishments in the three cities are attempting to solve the problem by various methods. None has yet attempted to solve the problem through systematic training of their workers.

While these general conditions of a phase of the so-called social unrest prevail from city to city, the relief is so closely associated with the industrial opportunity that local study at once becomes imperative. What the schools are doing, what the children are needing, what the business establishments are demanding, seems to be uniform from community to community. What the school can do, what the family may expect, seems to depend on the industrial character of each locality.

Although the work for young girls is unskilled in all large factory industries, the processes open to the more mature women may require a certain degree of skill or manual dexterity and offer a correspondingly higher wage.

A study of the women-employing industries of Worcester and Cambridge shows that the largest industries which employ women do require some skill. Machine operating on clothing occupies almost one-half of the women working in factories in Worcester. Rubber goods, bookbinderies, and presses employ almost one-half the women working in Cambridge. There are, however, practically no provisions in the trade for training or preparing the beginner for the more skilled processes. The result is large waste, incompetence, and instability of the labor force, and scarcity of skilled workers.

The necessity for local study is well illustrated by the differences in these three cities. Worcester is the third manufacturing city of New England, with a population of more than 145,000. It is a political, industrial, and social entity, resulting in a lack of interchange of work and workers with Boston. It is, on the other hand, near enough to Boston to give opportunity for an interchange of custom and customers. Therefore, although the more skilled trades have a great insufficiency of skilled workers, the city is too far away to draw workers daily from Boston. Because of the lack of high-grade work, however, the wealthy people of Worcester come to Boston for their more expensive costumes.

Cambridge, a city of more than 100,000 inhabitants, presents a different situation. Although a political entity, it is industrially and

economically dependent on the various surrounding cities, as they are in turn dependent on Cambridge. This results in an exchange of work and worker, as well as of custom and customer. Cambridge, therefore, sends out skilled and unskilled workers to surrounding cities. Her large factories, on the other hand, employ women not only from Cambridge, but from surrounding cities. The university draws large numbers of transient residents. Its suburban character makes it the residence of many people who work in Boston. Such conditions partially explain the large development of laundries in Cambridge, which employ a large number of women. Its suburban character partially explains the investment of Boston and outside capital in large factories.

Somerville, a city of more than 77,000 inhabitants, is primarily a residence suburb. Only a few, small, scattering, low-grade industries exist. Although a political entity, Somerville is an industrial and economic dependency of Boston, Cambridge, and surrounding cities. It sends its skilled and its unskilled workers out to surrounding commercial and manufacturing cities.

The women-employing industries of Worcester show a tendency to group in four large divisions: Machine operating,[1] textiles, wire and metal goods, and envelopes and paper goods. The first group only, the machine-operating trades, offers opportunity to a large number for a medium degree of skill and wage. The highly skilled trades, dressmaking and millinery, show little development. They employ and offer opportunity to only a comparatively small number.

The women-employing industries of Cambridge show greater diversity, though rubber goods and bookbinderies employ more than 40 per cent of the women working in Cambridge. The highly skilled trades show very little development. The women-employing industries of Somerville are practically negligible.

What significance have these conditions for the problem of industrial training in each of the three cities?

In Worcester, the machine-operating trades employ large numbers of workers. There is a great scarcity of help. Training therefore in machine operating for a large number of girls would seem to benefit the worker by preparing her for the more skilled processes of the trade. A knowledge of the operation of the machine would lift the worker over the preliminary stages of unskilled work which prove a great sifting process and are a fundamental cause of instability of the workers. The skilled trades need only a small number of beginners each year, hence only a few should be trained for the shop. A large number of dressmakers are day workers or private workers. The problem for solution is to equip young girls for this

[1] Machine operating is used in this study to indicate the manufacture of corsets and other women's wear as a factory product.

broader field of the day worker, without the intermediary experience in the shop.

In Cambridge and Somerville the skilled trades show very little development, but Boston offers opportunity for prospective workers. Training might therefore well be offered in dressmaking and millinery. The workers can secure their preliminary experience in the shops of Boston and later return to their home town as independent workers, as the shops of Boston provide the intermediate as well as the advanced stage for the girls trained in dressmaking and millinery in Cambridge and Somerville. In Worcester that opportunity is lacking. The large industries of Cambridge offer little opportunity for training outside the factory. Boston, again, offers opportunity for the worker who is capable of a medium degree of skill and who must acquire immediate economic independence or partial independence. The machine-operating factories of Boston are in great need of skilled workers. The young girls of Cambridge and Somerville may well be trained and find opportunity for development in these factories of Boston.

Local conditions need careful study therefore in determining the character of trade training or continuation schools. Worcester has a purely local problem. Public money expended in training and developing her young prospective workers gives returns in more efficient workers, greater stability, and better social and economic conditions for the wealth-producing industries of the city. Cambridge and Somerville will necessarily be training and developing workers for the industries of other surrounding cities. Worcester need concern herself with the problem of part-time instruction in her own local industries only. Cambridge and Somerville must concern themselves with the problem of their workers in surrounding cities. Worcester is an independent entity from an educational, economic, and industrial point of view. Cambridge and Somerville can not become independent from an educational point of view any more than they can from an economic or industrial standpoint. Only by intensive cooperation with surrounding cities, therefore, can the people of Cambridge and Somerville meet the needs and demands of the girl.

There are advantages, however, as well as disadvantages in the dependence on surrounding cities. The workers of an industrially independent city like Worcester may be deprived of opportunity for development and experience in highly skilled trades. The workers of an industrially dependent city may have the advantage of access to the skilled trades of a neighboring city.

A knowledge of local conditions is therefore essential before action can be taken in the establishment of trade training or part-time schools. Satisfactory results and efficient work can come only

with a thorough understanding and careful consideration of existing conditions, needs, and opportunities in localities where such schools are to be established. A knowledge of the processes of the trade, the possibilities of cooperation between school and industry, the natural ability of the children and what they can do in the schools and in the factory, is necessary to enlightened policy. Interest on the part of the community as well as close cooperation with those who control the industrial situation is essential to success.

I. THE METHOD OF INVESTIGATION.

A brief survey of the methods and sources of information used in the study of a single city with a view to discovering the need of and opportunity for industrial training is presented as showing the validity of the study, and as suggestive for future study for similar purposes.

THE SCHEDULES.

Two schedules were used—one for the interview with the individual and one for the interview with the employer.

(*A*) The individual schedule was drawn up by the deputy commissioner of education and was "designed to be used by schools for the primary purpose of ascertaining the probable number and identity of the girls who may become pupils in a free public trade school if one should be organized in the future."

This schedule was planned to cover three types of pupils: (1) the pupil who has left school within the past school year; (2) The pupil over 14 who is still in school, and (3) the pupil between 13 and 14 who is still in school. (See accompanying blank.)

INDIVIDUAL SCHEDULE.

.....
(City or town.)

.....School Bldg.

Pupil who has left school.....
Pupil over 14 who is still in school.....
Pupil between 13 and 14 who is still in school....
(Indicate by the mark (X) which of the above describes the pupil named below.)

(*Blank for use in investigating the need for the industrial training of girls.*)

1. Name of pupil.....
2. Date of birth..... 3. Age last birthday.....
4. Parents' or guardian's name.....
5. Nationality of father..... Of mother.....
6. Place of residence.....
7. Present or last year in school.....
8. Type of pupil: (a) Application.....; (b) Scholarship.....
   (c) Conduct.....

(Use the terms good, fair, and unsatisfactory.)

9. Health and strength:
   (1) Do you regard her as normal or below normal in health and strength?.....
   (2) Is she mature or young for her years?.....
10. Has she displayed skill or interest in practical work of any kind?.....
11. Do you think she will be more successful in trade work or in other kinds of work?

.....

(Use the expressions "in trade work" and "not in trade work.")

12. Which of the following things does the girl and which do the parents wish to do?

	Parent.	Girl.
1. Withdraw her from school.....		
2. Place her in a local free public trade school if offered.....		
3. Retain her in regular public school work.....		

(Write the word "Yes" on the appropriate line and in the appropriate column.)

13. If given an opportunity would she probably attend a local free public trade school?.....
14. Economic and educational status of family:

(Father) (Mother)

Occupation of father and mother.....

Permanent.....Seasonal.....Temporary.....

(Write the word "Yes" after permanent, seasonal or, temporary.)

Occupation of other members of family.....Illness in family.....

Educational status of family.....

(Use terms "educated," "intelligent," "ignorant.")

15. Are her parents able to send her to a one-year course in a local free public trade school?.....

    A two-year course?.....
16. What are her home conditions?.....

(Use the terms "comfortable," "lacking in comfort," and "poor.")

17. Where, if anywhere, has she been employed?.....

(Give places, if possible.)

18. What wages did she first receive?.....
19. What is present wage received?.....

These schedules were distributed through the public schools with instructions to the teachers for filling out questions 1 to 11 from the public school records. It was hoped that the teachers might also answer in part at least, from their general knowledge of the pupils, items 12, 13, 14, 15, and 16, with respect to pupils still in school. The schedules were then turned over to special investigators, who followed to their homes a large proportion of the pupils who had left school in the past year, in order to complete the information required by questions 11 to 19.

Experience has shown the advantage of some changes in method of attack and plan of schedule in any future study. The original plan provided for an investigation of two distinct types of children—those out of school and those in school. The results obtained through the investigation seem to indicate the advisability of making each group the subject of a distinct and separate study. The statistical and intensive study of the children who have left school might best

be turned over to expert investigators, and the study of the children still in school left to persons connected with the schools. After the survey was completed, therefore, the directors of the investigation drew up a schedule designed for the pupil who has left school during any one year to be presented to the board of education as a working schedule. They feel, however, that the study of children still in school should be for the purpose of vocational guidance, and should be conducted on a distinctly different basis. No schedule is therefore suggested for this purpose.

The directors would urge that this schedule be filled for all girls who have left school in the year preceding the study. The proposed schedule would consist of two separate sheets, one dealing with the school history of the child and one with the economic situation. The first sheet, covering items 1–10, would be filled in by the teacher as before; items 1–6 from the school records; and 7–10 by the teacher, *with the aid of the investigator.* The second sheet would be filled in by the investigator through visits to the homes of these girls. (See following blanks.)

INDIVIDUAL SCHEDULE I.

(To be filled in by teacher and investigator.)

Pupil who has left school within last year:

..... Name.....
(City or town.)

.....School bldg. Address.....

.....Teacher.

1. Parent's or guardian's name.....
2. Nativity of father..... Of mother .....
3. Date of birth of girl ..... Age last birthday .....
4. Grade of leaving school ..... Date .....
5. Type of pupil: (*a*) Application..... (*b*) Scholarship..... (*c*) Conduct.....
6. Health and strength:
   (1) Do you regard her as normal or below normal in health and strength?.....
   (2) Is she mature or young for her years?.....
7. In what subjects is she deficient?.....
   In what subjects does she excel?.....
8. In what practical work, if any, has she displayed skill or interest?.....
9. What is the reason she left school?.....
10. If given an opportunity would she probably attend a local free public trade school?.....

INDIVIDUAL SCHEDULE II.

(To be filled in by investigator.)

1. Economic status of family.....

	Occupation.	Wage.	Character of occupation.	Regularity of occupation.
Father				
Mother				
Other members				

(For Character of occupation, use terms Permanent or Temporary; for Regularity of occupation, use terms Seasonal or Regular.)

Members not at work .....

2. Home conditions..... Grade of family.....

(Use terms or describe as to degrees. For Home conditions use terms Comfortable, Lacking in comfort, Poor.)

3. Rent paid..... Illness in family.....

4. Educational status of family.....

(Use terms Educated, Intelligent, Ignorant.)

5. Extent of parents' interest in trade school.....

(Based on parent's statement.)

6. Are parents able to send girl to local free public trade school?.....

(Based on investigator's impressions.)

7. Reason why girl left school .....

8. In what practical work if any does she excel?.....

9. Supplementary schooling:

(1) Has girl attended any other than regular day school?.....

(Public, evening, trade school, business, art, or any other day or evening school.)

(2) Length of time.....

(3) Department of the school.....

9. Business experience of girl:

	Firms.	Occupations.	Wages.	Length of time.
1.				
2.				
3.				
4.				

(B) The firm schedule was designed for a study of the industry, and was drawn up by the directors of the investigation.

FIRM SCHEDULE I.

FIRM. ADDRESS. PRODUCT. TRADE.

.....

CONDITIONS OF INDUSTRY { Regular..... / Seasonal.....

SEASONAL WORK { Time of max. emp..... Total No. emp..... / Time of min. emp..... Total No. emp.....

Dull season: Distribution of work.....

Change in..... Efforts to regulate.....

WOMEN WORKERS—Supply..... Source..... Homes.....

	Schooling.	Age.	Nationality.	Experience.	Physical characteristics.
Type desired...	.....	.....	.....	.....	.....
Type in shop...	.....	.....	.....	.....	.....

Age groups—No. between 14-16..... Age of majority.....

LEARNERS, GIRLS—No..... Per cent unsuccessful and reason..... Lowest age accepted.....

Training—Kind ..... Length of time.....

Qualities desirable.....

Suggestions for trade training.....

The investigation has shown that item 1, "Conditions of industry," is unnecessary, as no industry has yet been discovered which does not show fluctuation or seasonal aspect. This conclusion is borne out by the Twelfth United States Census tables of numbers of wage earners employed by months. "Change in" is also unnecessary. On Schedule II, an additional column under "Number employed" for "Girls" (including girls over 14 and under 16) should be inserted.

FIRM SCHEDULE II.

FIRM..... ADDRESS.....

KINDS OF OCCUPATIONS.	No. employed.		General, sectional, team work.	Weekly wages.					Remarks.
	Men.	Women.		Min.	Max.	Maj.	Time.	Piece.	

BASIC PRINCIPLES OF PROCESS.....

.....

HOURS..... Daily..... Weekly..... Noon.....

WORKROOM..... Lighting..... Ventilation..... Space..... Cleanliness.....

Legal observances.....

INTERVIEW WITH..... Date..... Investigator.....

The study of the children who had left school in the preceding year inspired the desire to know if the conditions discovered for this single group of girls were representative. A small card with 6 questions was accordingly drawn up, and with the cooperation of firms and forewomen put into the hands of the workers of some of the

large factories of Worcester as a test case. The returns were not as complete as might have been secured if the investigators could have personally supervised filling in the cards, and we should advise this in the future if permission could be obtained from the firm. The results, did, however, confirm the impressions gained from the study of a single year's group of girls going to work. The third question did not draw as satisfactory results as desired and would be better worded thus: "Were you compelled to leave school to go to work?"

Questionnaire for women factory workers.

1. How old were you when you left school?.....
2. In what grade were you when you left school?.....
3. Why did you leave school?.....
4. How long have you been out of school?.....
5. What are the different kinds of work you have done?.....
   - 1st.....
   - 2d.....
   - 3d.....
   - 4th.....
   - Present.....
6. If the school had taught trades would you have stayed a year longer to learn trade work?.....

SOURCES OF INFORMATION.

The age and schooling certificates in Worcester and Somerville provided invaluable statistics as to total numbers, age, and schooling of girls going to work.

Through the courtesy of the chief district police, lists of factories and shops in the records of the factory inspectors of the cities studied were placed at the disposal of the State board of education. These statistics enabled the investigators to discover what industries were drawing the girls and women workers and to select wisely and visit representative establishments. Sixty-three establishments in Worcester were visited, including not only the largest women-employing[1] industries, but also those offering greater opportunity for skill, development, and financial advancement.

The names, addresses, and school history of some 500 girls were secured from the public schools of Worcester. Three hundred were followed to the addresses given, and 214 located and visited. The age and schooling certificates of 727 girls who went to work in the past year, the records of 214 girls visited in their homes, the information gained from visits to 63 establishments, and the factory inspectors' reports, therefore, provide the material for the study of the needs of and opportunity for trade training in Worcester.

[1] The term "women-employing" is used in this study to indicate those in which large numbers of women and girls are engaged. The term "girls" to indicate girls 14 and under 16 years of age.

II. INDUSTRIAL OPPORTUNITIES FOR WOMEN IN WORCESTER.

Worcester is one of the great manufacturing cities of Massachusetts. In 1905 [1] it ranked third in New England and twenty-ninth in the United States. The knowledge that many women are working in the industries of Worcester and that many girls are commencing work at a very early age has aroused the schools and the community to endeavor to discover what the real conditions are, and what more can be done by the schools to prepare the girls for their life. It has well been said that children may be either "book-minded" or "motor-minded." The "book-minded" take advantage of the present opportunities, continue in one type or another of the schools, and finally enter professional or commercial life. The "motor-minded" girl is one who learns more by seeing, handling, doing things than she does from books. The purpose of this study is threefold: First, to discover what has become of these "motor-minded" girls who have entered industry at 14 or 15 years of age; second, to suggest, if possible, how the schools can persuade them to give a longer period to preparation; and, third, to discover what is the type of preparation which would fit them for the demands of the industries of the community.

It is therefore with these children who have dropped out of school during the past year that this study is concerned. It in no way considers the girls who now remain in school, and can afford a period of four years or more after they have completed the grammar grades; nor does it concern itself in any way with the book-minded child who through accident or temporary discouragement has been forced out of school, but might be influenced to return. It must be kept in mind, therefore, that the study considers the child 14 or 15 years of age, the child whose interests and abilities are for the more active and industrial pursuits.

Three definite lines of attack have been followed in making this study. First, it seemed necessary to gain a general view of all kinds of industries employing women; second, to intensify on those trades which seem to offer to the woman worker the greatest opportunity for self-development, for financial advancement, and for large demand; third, to follow to their homes the girls who had left school to go to work in the past year, to obtain some conception of the economic situation and aims and ambitions of these families.

Although the manufactures of Worcester are more diversified than in many of the New England cities, four great industries, viz, machine operating (manufactures of corsets, women's clothing, shoes, and slippers), textiles, wire and metal goods, and paper products, are the

[1] Census of Massachusetts, 1905; III. Manufactures and trade, XXXIX.

great women-employing industries of Worcester. Accordingly, visits were made to 11 clothing factories, representing all the largest establishments and employing about 1,200 workers; to the 3 largest corset factories (of a total of 6), employing more than 2,000 women and girls; to 3 out of 7 shoe factories, employing about 225 workers; to 6 out of 18 textile mills, employing 800 women; to 1 of the 39 or more wire and metal factories, employing about 150 women; to 3 of the 10 envelope and paper goods factories, employing over 600 women; and to a biscuit factory.

A more comprehensive study of the trades offering a higher grade of work was attempted, and visits were made to 19 dressmakers (1 of whom was conducting the department for custom wear in the largest department store), employing some 200 women, and to 16 millinery establishments (4 of which constituted the millinery department of the 4 largest department stores), employing some 200 women.[1] Worcester is, however, primarily a city of factory industries, which have shown a very rapid growth in the last few years. In 1908,[2] for instance, 4 corset factories, employing 1,029 women workers, are reported, as compared with 6 corset factories in 1910, employing about 2,000 women and girl workers. The growth of this industry, undoubtedly, partially explains the increase in the number of 14- to 16-year-old girls who are leaving school to go to work.

The problems which concern us in this discussion of the need and opportunity for trade training for women will follow four main lines: (1) The annual exodus of young girls from the grammar schools, with a study of their age, schooling, nationality, and results gained from their early entrance into industry; (2) the industries which these young girls enter; (3) the kinds of work which the young girls do in these industries; and (4) the great women-employing industries in Worcester.

III. THE EXODUS OF YOUNG GIRLS FROM THE SCHOOLS.

A. Number of girls leaving school.—The number of girls under 16 years of age who leave school to go to work has increased 40 per cent in the past five years. From September, 1909, to September, 1910, more than 700 girls[3] took out age and school certificates. Five years ago only 513 girls[4] applied for these certificates, an increase of about 200 in all.

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[1] Total numbers of employees or of establishments for industries as a whole are based on the factory inspector's reports, which can be accepted only as indicative rather than statistical.

[2] Twenty-third Annual Report on Statistics of Manufactures, 1908, p. 25.

[3] Number of certificates issued to girls within the past year and preserved in the office of the truant officer. This number probably includes some certificates taken out for temporary work, such as for the Christmas rush in the stores or for the summer vacation. Of 200 girls visited, however, less than half a dozen had taken out age and schooling certificates for temporary employment.

[4] This number is based on the figures given in the Report on Industrial and Technical Education, 1906, p. 70.

The significance of this increase in the number of girl workers becomes apparent when it is discovered that there was an increase of only 10 per cent in the population during these five years.[1] The increasing number and size of the great factories manufacturing corsets, textiles, and paper goods undoubtedly explains to some extent this increase in the number of girl workers, although the study of three cities, Worcester, Cambridge, and Somerville, seems to reveal a universal increase in the number of girls who go to work under 16.

Is this exodus of physically and mentally immature workers an economic necessity? Is it an ultimate benefit to the child? Is it an economic advantage to the employer? In fact, what is the effect of the large number of girl workers leaving school as soon as the law allows? Such are the questions these data force us to meet.

B. Age of girls leaving school.—These facts concern us all the more when we discover that about 60 per cent of the girls who left school to go to work in the past year were only 14 years of age.[2]

Let us stop for a moment to see what this annual outgo of more than 700 girls under 16 years of age means to the community as well as to the girls. Are they prepared to take their place in the labor world, where approximately 10,000 women exclusive of home workers were employed last year,[3] and what sort of preparation might have been given them?

C. Schooling.—Only 6 per cent of these girls have gone beyond the grammar grades; 8 per cent left school before reaching the sixth grade; about one-third dropped out in the sixth and seventh grades alone, and over one-half left school before reaching the ninth grade.[4] If all statistics, however, were complete, the proportion in all these groups would probably be larger, as the base used is the total number considered rather than those reporting.

D. Nationality.—It is the natural assumption after visiting the factories to suppose that the exodus of young girls from the schools into the factories can be explained by the fact that large numbers are of southern European birth or descent. It is somewhat surprising, therefore, to find that 31 per cent of the girls who left school without special economic pressure were of Scandinavian, 20 per cent of American, and 20 per cent of Irish descent.[5]

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[1] Population of Worcester, 1905—128,135. (Census of Massachusetts, 1905, I.) Population of Worcester, 1910—145,986. (Special statement from Bureau of Labor, December, 1910.)

[2] Seven hundred and twenty-seven age and schooling certificates issued in the year September, 1909-September, 1910.

Age, under 14, 7: 14 and under 15, 431; 15 and under 16, 177; 16 and under 17, 24; 17 and under 18, 4; unclassified, 84; total, 727.

Under 14 years of age, 7: 11 years and 10 months; 13 years and 2 months; 13 years and 5 months; 2 of 13 years and 10 months; and 2 of 13 years and 11 months.

[3] Statistics from reports of factory inspection, together with data gathered from a personal study.

[4] See p. 56.

[5] See p. 57. No data were secured on such a large number that the percentages are based here on the number reporting.

The northern European nationalities were also the predominating social elements leaving the schools of Cambridge and Somerville, which seems to indicate that for some reason the children of southern European descent are not found in large numbers through the public-school records. This can probably be explained in three ways. A large number of the children of southern European birth or descent probably receive their schooling in the parochial schools. Some of the young girls observed in the industry were probably 16 or over at the time of their immigration to this country. Finally, there is reason to believe that some children get into industry without certificates, a fact which is also noted in the Government study of women in industry made in 1907.[1]

E. Economic and intellectual status of families.—Sixty-six per cent of the girls from 214 homes chosen from typical sections of the city might in the opinion of the visitor have gone on to school. Taking every factor into consideration, however, such as irregularity of parents' work, or father or mother dead, fully one-half, on a very conservative estimate, might have had longer schooling. Fully 55 per cent of the girls who left school in the past year came from really comfortable homes, and 58 per cent from intelligent families.

The importance of these facts becomes apparent when it is discovered that almost one-half of those going to work without special economic pressure were 14 years of age; that 25 per cent had not reached the seventh grade, and 60 per cent could not have passed the ninth-grade test. The surprising fact that one-quarter of those who left school without special economic pressure had not reached the seventh grade emphasizes the need of some kind of training which will capture these motor-minded girls and offer incentive for longer schooling.

Some 30 girls said they did not like school, could not get along with the teacher, were not promoted, or wanted to go to work. Two were working to help pay for a piano. One of these was a cash girl of 14 years who had left the ninth grade to go to work in a department store for $2, later $2.50 a week. The other was a girl of 15 from the eighth grade who went to work in a corset factory for $1 and rose to $4.82. Another girl was taking music lessons and contributing to the payment on the piano.

Twenty-seven girls were staying at home. In some cases they had left to help at home, while a few had left at a time of temporary stress and then had not returned to school. Four girls had changed places with the mother, who worked in a corset factory, laundry, or some such place, while the girl, whose wage-earning power was small, kept house for the mother or the children. A few were at home

[1] Report on Condition of Woman and Child Wage Earners in the United States, I. Cotton Textile Industry, 1910. (61st Cong., 2d sess., S. Doc. No. 645, 156–162.)

because they could not get along at school, but need not necessarily work.

The standard of living and ambitions of the family are, after all, the determining force. The mother of a family of 8 children living in apparently direst poverty would have been glad to make sacrifices and pinch still further to have her daughter stay in school longer, if she would do so. The mother of another family of 6, living in a nice apartment house, with hardwood floors, piano, and other luxuries, said her daughter wished to stay in school longer, but the burden of supporting the family was too heavy for the father to bear alone; so the girl was taken out of school to go to work. A visit to a Swedish family revealed a carpenter and his wife, a washerwoman, who had just built and owned a nice new three-story apartment house. Yet the 15-year-old daughter with a seventh grade education had been sent to work in a paper-goods factory at $2 a week.

The question "Why did you leave school?" was put to some 336 more mature workers in the corset trade. Ninety-one per cent of these women had left school between the ages of 13 and 16, and fully 50 per cent because of their dislike of school or because they wanted to go to work. Of 74 workers in a clothing factory, 85 per cent had left school between the ages of 13 and 16, 25 per cent of their own volition.[1]

Such facts emphasize the large demand for training which gives opportunity for manual combined with mental development. During these years between the ages of 13 and 15 there is a marked desire for manual or physical activity, a characteristic natural to this stage of physical development, which must find expression in the actual doing of things. The parents of these children leaving school, in many oft-repeated instances, were willing, and, as has been shown, fully one-half were economically able, to have the daughter stay in school longer, but "when she takes a notion in her head, there's no doing anything with her," so she goes to the mill, the factory, or the store at $1, $1.50, or $2 a week, which in many cases is more than she is worth to her employer.

Visits and talks with the families as well as the girls, therefore, reveal a situation which quite contradicts the usual impression that the parent takes the child out of school or forces her to go to work at an early age.

F. Summary.—The foregoing statistics show several most significant facts: (1) That more than 700 girls under 16 years of age took out certificates to go to work in the past year, and that this number is increasing at the rate of 40 per cent, or about 200 girls in five years.

[1] These percentages are very conservative statements. Many workers did not specify whether volition or necessity was the cause of their leaving school, merely answering "to go to work." None of these answers were included in either group in determining the percentages.

(2) That 60 per cent leave at the earliest age the law allows, at 14 years of age. (3) That 8 per cent could not pass the fifth-grade test, one-third could not pass the seventh-grade test, and one-half could not pass the ninth-grade test. (4) That this exodus does not indicate economic necessity. Of 214 families studied, fully one-half the girls were not forced to curtail their education, and 55 per cent were living in really comfortable homes. Furthermore, almost one-half of those children who might continue in school were only 14 years of age, and one-fourth had not reached the seventh grade.

IV. INDUSTRIES WHICH YOUNG GIRLS ENTER.

A popular supposition seems to prevail in Worcester that the majority of young girls who leave the grammar grades go into mercantile establishments. But only 22 per cent, or less than one-fourth of the total number, entered that industry last year. The factories and mills claimed more than three-fourths of them.

Of the latter, the corset factories and the textile and knitting mills, drew 56 per cent of the girls, the corset factories getting 28 per cent, or the largest proportion of the whole. Five other industries claimed the majority of the remaining girls—the manufacture of metal goods, 10 per cent; paper goods, 6 per cent; shoes and slippers, 4 per cent; women's clothing, factory product, 5 per cent; and food and drug products, 3 per cent.[1]

But two determining forces appear to decide what industries the most of the girls enter. The young girl who lives in the neighborhood of a large factory or mill is likely to work in the nearest factory during the first few years, but distance from home is a less important factor as she becomes older. The occupation of an older member of the family, primarily the mother or older sister, is a very apparent determining factor. Of the 214 girls visited, about 25 per cent were working in factories where their mothers or sisters were working or had worked.

V. KINDS OF WORK DONE BY YOUNG GIRLS.

A. Unskilled industries.—In all these factory industries[2] (excluding dressmaking and millinery) the girls of 14 to 16 perform unskilled work. This may assume different forms, as boning corsets or tending machines in the corset factory; running errands; folding waists, dresses, or shirts in a clothing factory; doffing in the textile mills; putting pasteboard sheets into a machine in the paper box factory.

[1] See p. 58.

[2] This term has been used throughout the report to indicate those industries which are in the process of developing an advanced stage of industrial evolution. Such industries, whether employing a large or small number of workers, show a fairly high subdivision of labor, specialized and repetitious work, use of artificial mechanical power and also that peculiar characteristic which differentiates them from large highly skilled industries—a standardization of process or product.

Whatever the kind of work or process, there is one feature common to all this unskilled work [1]—the purely mechanical performance of a monotonous process requiring little thought, intelligence, or ultimate responsibility, and destructive to rather than promotive of the power of initiative and intelligent thinking, and capacity for a higher grade of skill. Since little ability or intelligence is required, the supply of labor for those stages of the work is plentiful, competition great, and pay correspondingly low. Certain of these industries might, nevertheless, appear to be preferable for different reasons for the young girls just out of school. One industry might seem to offer opportunity for financial rise or self-development for the mature worker. Another not having this qualification might be preferable because the type of work and product handled are nice and clean, and the sanitary conditions superior. On the other hand, certain industries might be discouraged for young girls because of the necessity of continuous standing, damp or oppressive atmosphere, or severe physical demands.

It is hardly necessary to discuss here the lack of opportunity and the low wage received by young girls in the three great factory industries—textile mills, metal trades, and paper goods. Besides these disadvantages, we may briefly note the influence of the noise and vibration of machinery, continuous standing, and heavy, oppressive atmosphere on the young girls in the textile mills, which rank second in the number of women employed. The metal trades, which rank third in the number of women employed, make heavy demands on the physical strength of the young workers; so much so that some employers allow women workers to work only one-half day at the machines, and to spend the other half on some process requiring less physical strength. The paper trades, which rank fourth as women-employing industries, offer clean work and pleasant surroundings for the girls. The processes are, however, largely mechanical and monotonous, and the trade does not offer large opportunities for development or financial advancement.

B. Mercantile establishments.—The department stores and shops of Worcester, which draw almost one-fourth of the girls leaving school, might seem to offer a better field and more opportunity for advancement. Girls of 14 to 16, however, must usually begin as cash or floor girls. The much more comprehensive study of 1906 [2] showed that few cash girls rose to the higher position of saleswoman because of lack of maturity and ability.

C. Medium skilled trades.—Machine operating: The machine-operating trades, such as the corset trade, certain branches of the

[1] This classification is based on the definition and classification used in the Report of the Commission on Industrial and Technical Education, 1906, pp. 33–34.

[2] Report of the Commission on Industrial and Technical Education, 1906.

women's clothing trade, shoe and slipper trades, under the best conditions would seem to offer a better field and more opportunity for advancement than the other great women-employing industries of Worcester. This is, however, an apparent rather than a real opportunity for the majority of young girls. Although the elementary processes which occupy the young inexperienced girls in these trades do not afford training in or working knowledge of the more skilled work, the most efficient girls are promoted by virtue of faithful service or adaptation to the factory.

D. Instability of workers in factory industries.—The great question, however, is: How many of these girls get beyond the unskilled labor stage and are able to profit by the opportunity for advancement? The preliminary processes, such as boning and machine tending in the corset factories, examining, cleaning, finishing (that is, snipping loose threads or giving any necessary finishing touches) in the women's clothing factories, are purely mechanical processes which more than one foreman has pointed out "don't require any brains or intelligence." The financial compensation naturally is small, based in most cases on the piecework system. Consequently, only those capable of a high degree of speed and application—attributes not characteristic of the 14 or 16 year old girl—can survive. The girl soon tires of the monotonous repetition of work and inability to meet the demands of the trade. Failure to realize sufficient income, inefficiency, discouragement, or slack season usually solves the problem and she determines to try something else.

Does the girl profit by this experience? Does her employer profit by her unskilled and uncertain work? The responses from employers reveal one of the greatest evils of these low-skilled industries, which alone [1] receive young girls—the instability resulting from the constant shifting from factory to factory.

The three corset factories,[2] employing 320 girls on machines, 93 per cent of the girls under 16 employed in the corset trade,[3] reported that a large proportion of the young girls drop out before they are promoted to the more skilled processes because they get discouraged and impatient. "One-half of the girls," remarked one superintendent, "get discouraged before they reach the point of maximum speed, and quit when they are probably just about to strike a paying point." Several factories have adopted various expedients to protect themselves against this shifting of the workers. One corset factory charges the learners the amount equivalent to the loss of time of the one who teaches her. This amount is refunded if she

[1] The proportion of girls 14 to 16 years old taken into millinery and dressmaking is so small in comparison as to be practically a negligible quantity.

[2] Of the 6 established in Worcester.

[3] Numbers based on statistics from factory inspector's report, together with statistics gained from factories visited.

stays six months.[1] In spite of this provision, the proprietor estimates that he loses annually more than $1,500 on his learners. A clothing factory requires a deposit of $1 from all learners. Another clothing factory keeps back $10 for loss of the forewoman's time, which is refunded to the worker at the end of the first year if she is still working in the factory.

Reports from the less skilled industries show a still more serious situation. One of the large paper-goods firms, with a total force of 200 workers, says he "takes on 250 learners during the year and that 50 per cent do not stay long enough to give themselves or the work a fair trial. Many come from curiosity and stay only a week or two, yet each girl has cost several days of the time of a high-priced forewoman." The manager of a biscuit factory employing about 75 workers says the girls stay with the factory only a short time. A wire factory with a still lower grade of work shows still greater fluctuation in the working force. The processes can be learned in a few days and the maximum wage reached in two months. The result is that, although the regular force consists of about 150 women workers at any one time, from 450 to 500 learners pass through the factory in a year, generally staying but a few months.

Shifting for betterment would be advisable if the workers actually bettered their condition. But this is an open question. All learners or inexperienced workers in any trade, whether it offers a future or not, must serve a certain amount of time in the unskilled processes. A large proportion do not stay long enough in any one trade to become skilled workers. The result is an army of drifters and unskilled workers always condemned to irregular and uncertain work, inefficiency, and low pay. The instability and irresponsibility of young workers, together with the efforts of the Consumers' League, have resulted in the exclusion of girls under 16 from the better factories and industries. Five of the eleven clothing factories visited, employing about 750 women workers, do not admit girls under 16. Unfortunately, this increasing tendency to exclude girls under 16 from the better factories has a reflex action on the industry itself, complicating the labor problem of the better industries, by allowing the unskilled trades to ruin those who might in mature years become skilled workers.

The girls of 14 and 15 leaving school to go to work then have little choice except the unskilled industries, where they must spend from one to two years in purely monotonous or mechanical work. After one to two years' experience, they are eligible to the more skilled industries from the standpoint of age; but the study of 200 women in one of the highly skilled trades of Boston and 109 in those of

[1] Amount not ascertained.

Worcester has revealed only 4 workers who began their career in unskilled trades.[1]

The effect is, however, equally disastrous to the industry. All employers in all kinds of business complain of the scarcity of responsible, to say nothing of skilled, workers. One clothing factory was forced to send to New York this fall and import a large number of workers. Another had to close one room of its factory, with a capacity for about 40 workers, because of inability to get workers. One of the clothing firms offered the investigator $5 for every worker she would send him. Dressmakers are closing their shops and going to work by the day or into the shops because of inability to get help. The demand for skilled workers far exceeds the supply. The opportunity for the skilled worker is great; the opportunity for the worker to acquire this skill is small.

The present method of learning the trades in the factories has proved far from satisfactory to all concerned. The new worker usually "picks up the trade" with what aid and time the forewoman or some other skilled worker can give. The majority of firms of the various industries visited agree that this is an inadequate and expensive process. The demand on the forewoman's time is continuous and the return small, since a large proportion of the workers do not reach the stage where they can give adequate return. The proprietor of the corset factory who estimated that his learners caused him an annual loss of $1,500 has been cited. The proprietor of a shirt factory estimated that each learner meant a loss of $50 to the firm. A shoe firm "will not bother with green girls—too expensive," while another takes only bright girls. A paper firm reports that one girl teaches another in both hand and machine work, but that this is an expensive method.

E. Summary of industrial conditions which confront young workers.—Several facts, then, are to be noted. The little girl of 14 or 16 has an opportunity to enter only unskilled work. The monotonous mechanical work which she does is destructive to rather than promotive of intelligence, responsibility, and preparation for a higher grade of work. The masses of young girls do not easily adapt themselves to this mechanical, monotonous work; drift from one place to another, thus learning or becoming proficient in no one trade. When they reach the age which makes them eligible for a higher kind of work, therefore, the masses have not developed or have lost the power to take advantage of the opportunity now opened to them. The factory industries requiring more skill have no satisfactory system of training the prospective worker for the trade. The result is that the mass of workers who begin work in the unskilled trades remain there and never get any higher.

[1] Study of dressmaking made by the research department of the Women's Educational and Industrial Union, Boston, to be published in its series on Economic Relations of Women.

F. Need of trade-training school.—One great need of the industrial world stands out prominently—a trade-training school which can take the 14 or 15 year-old girls who will not go to the regular schools and must go to work in a year or two. If this trade-training school can give her such equipment that she may be lifted over the preliminary unskilled processes in the industry and put upon work which continually trains and develops her for a higher kind of work, the great mass of unskilled, unstable workers must in time decrease.

VI. WOMEN-EMPLOYING INDUSTRIES OF WORCESTER.

With this in view, three problems come up for consideration: First, what are the women-employing industries of Worcester? Second, what are the opportunities as to numbers needed, self-development, financial compensation, and future outlook in each trade? Third, what can be done to adapt the women for the better trades and adapt the trades to the women workers so as to secure for both the best possible results? In other words, what is the need of and opportunity for trade training?

The general facts learned from the study of a single year's group of girls serve as a fairly good index to the women-employing industries of Worcester. Statistics show that approximately 1,300 women and 138 minors were employed in the mercantile establishments of Worcester during the past year; that 8,000 women and 1,000 minors, not including home workers, were employed in manufacturing in Worcester;[1] that is, five-sixths of the women and five-sixths of the minors at work are engaged in manufactures.

Four industries occupy almost 90 per cent of the women employed in manufactures. The machine-operating trades, covering the production of corsets, women's clothing, and shoes and slippers, stand foremost, with 52 per cent of the women and 65 per cent of the girls employed in these four industries. The textile industries rank second, employing 18 per cent of the women and 20 per cent of the girls. Wire and metal goods rank third, with 15 per cent of the women and 9 per cent of the girls. The metal trades draw a comparatively small number of girls from school, because of the heavier physical demands. Envelopes and paper goods rank fourth, with 13 per cent of the women and 5 per cent of the girls.

[1] Statistics from records of factory inspection. These figures must be accepted as indicative rather than statistical.

Four factory industries employing women in Worcester.[1]

Industries.	Women.	Girls.
1. Machine operating	3,680	444
Corsets	1,898	398
Women's clothing	1,393	28
Boots and shoes	389	18
2. Textiles	1,281	137
3. Wire and metal goods	1,092	62
4. Envelopes and paper goods	937	39

[1] Statistics gained from records of factory inspector, together with those acquired by personal visits.

A. Unskilled industries.—The textile industry, wire and metal goods and paper goods manufactures offer comparatively small opportunity for self-development, as has already been shown, though in some cases larger opportunity for financial advancement. The majority of the processes in the textile mills are highly mechanical and offer little opportunity other than tending machines. Weavers get good pay ($5 to $14 per week), but this branch has been closed to women in one large factory, because of the 56-hour law. In the carpet mills a large number of hand sewers are employed, and receive $12 to $18 a week. In the worsted and yarn mills a small number of burlers or menders (hand sewers) receive from $6 to $12 a week.

The metal trades are probably the most hopeless of all trades as an industrial career for women, yet they are the third largest women-employing industry of Worcester. The superintendent of one of the large wire factories granted that "there is little future" in the trade. Beginners in this factory start with 75 cents a day, the majority getting $1.75, with a maximum of $2 a day.

The paper trades are more desirable, in that the physical demands are less severe, the work cleaner, and the surroundings probably more attractive. The manager of a large envelope factory, however, frankly says there is no future in the business for girls, and that only workers of a type not high enough for skilled trades should be encouraged to go into it. The average girl learns the processes in one to two months, but according to one employer requires three years to reach the maximum speed. Folding of envelopes by machine is wholly unskilled work, the girl merely feeding the paper into the machine. Folding envelopes by hand requires a certain degree of accuracy, deftness, and speed, as does also covering pasteboard boxes with glazed paper. With the piecework system, envelope makers receive from $9 to $15 and box makers from $4 to $12, according to process and product. The manufacture of fancy paper products, such as valentines, cards, etc., is pleasant and attractive

work, but offers a short working season.[1] There is opportunity for a comparatively small number of designers at $10 to $15, but the majority of the processes are unskilled and offer a range from $3 to $10 a week.

The proprietor of a large paper-goods factory says: "If a trade school could teach girls promptness alone, that would be worth something. Promptness, neatness, and a general knowledge of the industry should be taught those of not high enough type to be good material for skilled trades." This employer has struck the essential point in his appreciation of the need of a broader background and interest. The problem of how and when this broader background can be given the workers of these three factory industries is an open question. The small proportion of age and schooling certificates issued for the paper-goods factories corroborates the conclusion gained from visits to the factories, that the majority of these girls had reached the age of 16. The proprietors of the three paper-goods factories visited said they get most of their workers from the schools. If most of their workers come directly from the schools, and the majority are 16 years of age, this may account for the apparent higher grade of young girls in these factories.

The needs of the worker in these three factory industries, therefore, are somewhat different. The workers in the textile mills and metal-goods factories leave school early, and have little general or cultural education. The workers of the paper-goods factories may have, on the whole, more of the cultural education, yet the employer in the trade appreciates the need for a still wider interest and outlook. The opportunity for these workers probably lies either in part-time schools or in evening schools for the mature worker, giving a certain amount of supplementary training connected with the trade, but chiefly complementary teaching in domestic and academic subjects. Quite a large number of the girls visited in their homes asked if evening schools would be established, and expressed a desire to attend. A large number, however, would not be reached by evening schools, because of the demands on the physical strength of the girl or woman who has a 10-hour working day.

B. The skilled industries.—(1) Machine operating: But one group of trades in Worcester, the needle trades, therefore, can be said to lay claim to a high grade of skill and offer opportunity for development and advancement.

The machine-operating trades show a state of transition from the low-skilled factory industries just discussed, to the high-grade skilled trades, dressmaking and millinery, and can not be considered as requiring more than a low grade of skill. The introduction of

[1] September–December, time of maximum employment, 200. April–August, time of minimum employment, 26.

specialized machines which do only a special process, such as tucking, hemstitching, sewing on buttons, making button holes, and embroidering edges—the extreme division of labor, so that one girl does a single process from one day's end to another—and the supremacy of mechanical processes have largely eliminated the need of and the demand for high-grade skill. Practically only three skilled processes exist in the factory-made clothing trades in Worcester. Of these, the cutting is monopolized with one exception by men. Of the two remaining processes, machine operating and hand sewing, the former employs by far the larger number of women.

The degree of skill required in machine operating is largely determined by the grade of product turned out. The machine-operating trades show 5 fairly definite stages of work which require (1) mechanical speed, (2) accuracy combined with speed, (3) accuracy combined with deftness, (4) constructive ability, and (5) artistic ability.

Machine operators on canvas goods—tents and awnings—or on overalls, stitchers and tuckers in a muslin-underwear factory, must acquire mechanical speed, primarily. Such workers are little above the envelope workers in degree of skill, with this slight difference, the power-sewing machine is subject to the worker who must feed the material through the machine straight, while the folding machine of the envelope feeder is wholly independent of the worker. Yet modern invention has introduced self-feeding, self-regulating hemstitching and tucking machines so that one girl can superintend 4 machines—merely walking back and forth to see that everything is going right. A single industry, like the manufacture of corsets, for instance, offers the first four stages of work and necessitates the corresponding qualifications in the workers. A factory which produces a 69-cent or a dollar corset made of cheap materials, with little attention to lines and adaptation to form, requires a comparatively small de ree of skill and can be turned out at a high speed by a comparatively low-skilled worker. A factory which, on the other hand, produces a four or five dollar corset made of expensive materials with much attention to style and lines must have skilled workers of intelligence, deftness, and accuracy. The manufacture of high-grade waists and dresses requiring a high degree of skill and artistic ability has not yet been introduced in Worcester. The individual factories and kinds of products are therefore important in determining the desirability and possibilities of the trade.

The different processes requiring different degrees of skill, responsibility, and intelligence are open to the various kinds of workers best adapted to each; and the degree of skill, combined with the speed of the worker, determines and explains the wide range of pay discovered in the machine-operating trades.

An average girl can learn to run a power machine in a few weeks but needs from 6 to 12 months to become a skilled worker and secure a wage of $6. The weekly wage varies a good deal, according to the individual speed and skill, and the supply of work, which fluctuates with the different seasons. Machine operators in the corset factories range from $6 to $15. This range expresses largely a difference in speed and skill.

Summary of women and girl workers and of wages in the three largest corset factories.

Occupations.	Employees.		Weekly wages.[1]		
	Women.	Girls.	Min.	Max.	Maj.
Machine operators	1,090	320	$6	$15	$9
Hand sewers	427	35	5	12	9
Pressers	78	.....	8	11	9
Examiners	26	.....	6	10	7
Boxers	15	.....	3	10	6

[1] Some machine-operating wages go as low as $1.50 during dull time of stock taking.

The $6 girl does the simple processes and works on the cheaper product. The $15 girl does the most skilled processes and also handles the best type of product. One firm reported that the machine operators sometimes drop as low as $1.50 a week during dull time of stock taking, but it is difficult to get statistics on the dull season without a canvas of the individual workers, because of its variation.[1] The employer is usually reluctant to say or does not exactly know what is the seasonal fluctuation, but three factories report that the months of November, December, and January are the times of minimum employment.

Machine operators on tents and awnings and heavier, coarser products require the lowest degree of skill and receive a correspondingly low range of pay, from $5.25 to $8.25. The range of wage here expresses primarily the range in speed. The machine operators of the 6 underwear factories and the 2 women's clothing factories must possess a wider range of skill and showed a usual range of $5 to $14, with the majority probably receiving from $7 to $9, though one girl in an underwear factory was reported to be receiving a wage of $18.

[1] The study of individual girls and of pay rolls in Boston firms is now being made by the research department of the Women's Educational and Industrial Union of Boston, and should contribute much to the correction of the wage irregularity. See also Goodman, Pearl, *and* Ueland, Elsa, The Shirtwaist Trade. Journal of Political Economy, December, 1910.

Six underwear firms—Illustrating kinds of work and wages of women.

Occupations.	Women.	Weekly wages.			Firms reporting.
		Min.	Max.	Maj.	
Machine operating	348	$5	$18	$9	6
Ribbon girls	15	3	4	4	3
Pressers	22	.....	.....	.....	2
Examiners	8	.....	.....	4	2
Finishers	24	6	7	.....	1
Cleaners	24	6	7	.....	1
Trimming preparers	10	6	7	.....	1
Lace girls	5	.....	.....	6	1
Outside workers	.....	.....	.....	.....	1

Women's clothing factory—Product: Shirtwaists and dresses.

Occupations.	Women.	Girls.	Weekly wages.		
			Min.	Max.	Maj.
Machine operators	160	4	$6	$15	$8–$10
Finishers	12	3–4	.....	.....	6– 8
Fitters	4	.....	.....	.....	7– 8
Pressers	8	.....	6	.....	.....
Folders	2	.....	6	9	.....

A typical shoe factory.

Occupations.	Employees.		Weekly wages.		
	Women.	Girls.	Min.	Max.	Maj.
Vampers	12	.....	$16	$25	$20
Eyelet workers	2	.....	13	.....	18
Back stayers	4	.....	12	18	15
Tip stitchers	2	.....	13	15	.....
Top stitchers	6	.....	12	20	15
Lining makers	6	.....	8	12	10
Sorters	.....	8	4	5	.....
Packers	.....	12	3	4	.....
Skivers	2	.....	8	12	9

Machine operating in a shoe factory requires a high degree of skill, and the wage is proportionately higher. The lining makers, who earn from $8 to $12, and work on heavy cloth, are the lowest paid machine operators in the shoe trade. Next beyond them in point of skill and earning capacity are the operatives who do the simpler parts of the stitching, back staying, etc. The most highly skilled workers are the vampers, who stitch together the vamps and the uppers. The difficulty in this process comes in being able to follow the curve of the vamp, and to join together the vamp and the upper part of the shoe in such a way as not to destroy the fit of the shoe. The range of wage in this trade then expresses a range both in skill and speed as in the better corset factories.

A forewoman in one factory said that a knowledge of machine operating on cloth would be of value to a girl in adapting herself to work on leather. The difference rests primarily in the strength required to run the heavier machine, and in the ability to handle the heavier material, as well as in the knowledge of the special machines in use in shoe factories.

The study of machine operating, therefore, shows that Worcester contains a large number of factories demanding ordinary machine stitchers at a maximum wage of $7 to $8, with a certain amount of seasonal fluctuation, though probably not longer than what might be called vacations. Also, without doubt, there are a fair number of opportunities for the better class of work, such as that found in factories producing the best grade of corset, and ranging from $12 to $15, with a smaller amount of slack time. Finally, opportunity exists for a large number in factories where the better grade of underwear is manufactured. Here the type of work is superior, or, at any rate, may lead toward the manufacture of finer goods, with a wage ranging from $5 to $14, and in a few cases as high as $18, though the majority probably receive not more than $8. The shoe factories of Spencer and Webster and the straw-hat factories of Upton offer opportunity for higher grade work and financial advancement. Although at present there is little or no interchange of work and worker between Worcester and these cities, these opportunities for better work and better pay may in time be seized by the people of Worcester, who have been trained in the machine-operating trades.

It is into these factories of Worcester that the larger number of young girls must go, and a certain amount of training for this trade will provide the means of entrance and advancement. It must be noted, however, that the opportunity in the trade is not such as to attract very large numbers of girls of great ability, as the room at the top is limited. It is, in general, the girl with less ability or the girl with the pressing need of economic independence who should be trained for this trade. The wage is probably as good as could be secured in other types of work accessible, and there is an opportunity for a high wage for the intelligent worker, while the type of work is superior to that in the other great industries employing women in Worcester. From the point of view of the trade and from the point of view of the girl, trade-school training may well be given for the machine-operating industry; because, first, it is the largest women-employing industry in Worcester; second, the demand far exceeds the supply of skilled workers; and, third, there are some branches of the work requiring a certain degree of skill and good financial remuneration. There are also neighboring towns where the demand for the most skillful operators in shoemaking and straw-hat making is very great.

No satisfactory or adequate system of training for the more skilled processes exists in any of the factories, so that the need of some method of systematic training is evident, and the advantage of profiting by the opportunity offered would doubtless soon become apparent. A large amount of training in the specific processes of the trade, however, does not seem necessary and, with the wage prospect as it now exists, not desirable. Four facts seem to prove that the outlook is encouraging for a favorable reception and for patronage of a trade-school course: First, the better factories in these trades do not receive girls under 16 for machine operating; second, employers show great interest in and approval of such a project; third, the economic condition of the family indicates that parents in Worcester could send girls to such a school; fourth, parents and children are interested in the suggestion. Possibly it would be necessary at first to begin with the shorter courses of 3, 6, or 9 months with the hope that as the school proved its effectiveness there might be added to the purely technical course, training in the needle trades and other subjects, which would make the girl more intelligent, more capable of advancement, and develop that larger power for economic independence which comes through right living and right spending.

The problem does not seem to be one of ability on the part of the family to give the child this training, but ability on the part of the school to persuade the child and parent that such training will in the long run be desirable. The fact must be faced that such courses are preparing the girl for the medium opportunity both as to the wage and as to development, with but comparatively small outlook toward the more advanced type of work and higher wage. For this reason it may seem desirable that different units of courses should be established as time goes on, starting with the shorter courses. Also it may become necessary to consider an effort to introduce part-time courses or regular courses in the dull season, if it is possible to discover that the less-skilled worker is dropped off earlier and would therefore have a sufficiently long dull season to make it worth while. Finally, it may prove wise to consider the establishment of evening continuation courses for the more mature workers.

(2) *Dressmaking:* But two industries requiring and offering opportunity for high-grade skill—dressmaking and millinery—are found in Worcester. The opportunity in this field is restricted here in two ways: First, in the smaller field and demand, and, secondly, in the high degree of skill, natural ability, and taste requisite for success. At present there are about a dozen dressmakers in Worcester who employ over 10 girls. Three of these employ a force of 20 to 30, and about 9 employ from 10 to 17 girls. Only about 18 of the 398 dressmakers in the city directory could be classed as employers in the true sense. A larger number employ two to three workers at

certain times of the year, but the majority, nine-tenths at least, are home or day workers, which illustrates the opportunity open to this type of worker.

Although Worcester is a social and economic entity, trades which are dependent on local custom and patronage suffer from proximity to Boston. Therefore, while the size and wealth of Worcester might seem to indicate large opportunities in dressmaking, the field is greatly decreased by the fact that the wealthier people of Worcester go to Boston to have their best clothes made or to get clothes ready-made. These people say they can not get as good a product in Worcester as they desire. The Worcester dressmaker says she could give as good a product as the Boston dressmaker if she could get the same price for her product.

However that may be, the dressmaking trade and the dressmaker of Worcester are greatly handicapped by lack of responsible and skilled workers. Some say they refuse work rather than take on new and unskilled workers to meet the increased demand. Others close shop to accept the better-paid openings in the large establishments or to go out by the day because of the dearth of skilled labor. Advertisements for well-paid positions run for months for lack of skilled workers to fill them. Several causes explain the great dearth of workers in this most desirable trade. First, only two or three of the smaller dressmakers visited will take apprentices, so that the trade is practically inaccessible to young workers. The only means of entrance for the young girl is probably through the errand-girl stage. The errand girl picks up the trade at spare moments, but this is a slow and haphazard method. Moreover, there are openings for only about a dozen errand girls in Worcester. Second, the dressmaking trade has more of a professional character and necessitates a longer period for training and growth than do the factory industries. Finally, a higher degree of natural ability and artistic taste is being increasingly required, which explains to some extent the disappearance of the old apprenticeship system in this trade and the lack of workers able to qualify for the trade. Practically every part of this trade has become such a skilled process and material is so expensive that there is little opportunity or need for unskilled workers.

How, under these circumstances are young girls to learn this most desirable trade? Almost all the larger employers prefer young workers who bring freshness, deftness, and originality, but have not the time nor opportunity to teach young girls in the shop. Almost all are desperate for more workers, but where can they get them? The employer has no time to train young girls, and practically only one very limited avenue to the trade now exists, the entrance as errand girl, a pseudo-apprenticeship, as a French student has termed it. This method is, however, unsatisfactory to employer and employee; to employer because it can not meet the demand for numbers

and for young workers equipped with the fundamental principles and processes of the trade; to employees, because it can not be adequate or systematic, and necessitates a long preparatory period of low pay and seemingly small return.

The dressmaking trade, therefore, shows the greatest need of some kind of a trade school where the girls can obtain the fundamental principles of the trade. Some workers with one year's training will be in demand in the trade. A larger number with two years' or more preparation will be required, for only large shops employing specialized workers need the smaller and less experienced girls in the workroom.

The outlook as to numbers and large pay is not yet very great in Worcester, due to the fact that the dressmaking trade there has not reached the higher stages of economic development. In Boston, for instance, seven distinct stages of economic transition are apparent in the dressmaking trade: (1) The day worker who goes out by the day at $1.50 to $4 a day; (2) the private dressmaker with a force ranging from 1 to 7 girls who are general workers of a medium degree of skill and ability receiving from $5 to $8 a week; (3) the small custom dressmaker with a force of 6 to 10 girls, of whom 1 usually has the title of head girl. The general workers receive from $5 to $8, as in the preceding stage, and the head girl from $9 to $10. (4) The larger custom dressmaker next appears with a force of 15 to 30 girls, among whom are a head waist girl, receiving from $12 to $15, head skirt girl with $9 to $12 and the usual subordinate workers characteristic of the preceding stages. (5) In the fifth stage each division of the actual production is isolated, with a head girl in charge of each; the head waist girl, head skirt girl, head sleeve girl, and head lining girl, each with her subordinates on a descending scale as seen in the preceding stages. Shops of this type have a force of workers ranging from 20 to 60 girls, who show a wide range of skill, responsibility, and corresponding compensation. (6) The sixth stage may be called the stage of specialization, where the head of each division of the work is a specialist. The head dressmaker with a weekly salary of $25 to $35, cutters and fitters appear in addition to the specialists in the actual production seen in the preceding stage. (7) The shop of the seventh stage shows one new and additional feature, the combination of sales and production departments. The shop of this stage may assume two forms, the commercial type in which a sales department of ready-to-wear gowns is added to the department of custom production, and the manufacturing type in which the so-called custom production for both local and more general, but still a so-called retail market is carried on. Such establishments have a head dressmaker with a weekly wage ranging from $35 to $50, and, in some instances, higher.[1]

[1] These statements are drawn from an extensive study of the dressmaking trade which has been made by the research department of the Women's Educational and Industrial Union, Boston.

Five types of dressmaking shops in Worcester, illustrating kinds of work and wage.

Type of shop.	Employees.	Kinds of occupations.																									
		Cutter.				Waist draper.			Skirt draper.			Coat girl.			Sleeve girl.			Finisher.				Helper.			Errand girl.	
		Employees.	Wages.			Employees.	Wages.		Employees.	Wages.		Employees.	Wages.		Employees.	Wages.		Employees.	Wages.			Employees.	Wages.		Employees.	Wages.
			Min.	Max.	Maj.		Max.	Maj.		Min.	Max.		Min	Max.		Min.	Max.		Min.	Max.	Maj.		Min.	Max.		
Large shop, high-grade custom.	29–38	.....	.....	.....	.....	1	$20	....	1	$15	$18	1	$15	$18	1	....	$12	19	$7	$10	.....	5–6	$4	$6	.....	.....
Small shop, high-grade custom.	15	1	$12	$15	.....	1	.....	$10	.....	....	....	....	....	.....	1	$6	9	11	6	9	.....	.....	....	....	1	[1] $3
Small shop, medium-grade custom	6–7	1	.....	.....	$10	.....	.....	....	.....	....	....	....	....	.....	....	....	....	4–5	....	....	$6	.....	....	....	1	[1] 3
Home dressmaker	2–3	.....	.....	.....	.....	.....	.....	....	.....	....	....	....	....	.....	....	....	....	2–3	6	....	7½	.....	....	....	.....	.....

[1] For 3 months.

The first five of these types of the dressmaking shop exists in Worcester. Since there is only a comparatively small number of establishments which employ a large force, there is opportunity for only a few highly paid workers, as the employer herself in most cases does most of the skilled work. One shop, however, has a waist cutter and fitter who receives $25 a week, another shop a head waist girl at $20 a week. Three reported head waist, coat, and skirt girls between $12 and $18. The remaining report $8 to $10 for waist and skirt makers and $3 to $7 for helpers and finishers. Six or seven smaller dressmakers employ 4 to 6 girls at $6 to $8. Day workers receive from $1 to $3.50 a day.

The demand for hand sewing in the factory industries is rapidly decreasing with the continual increase of perfected and specialized machinery. Corset factories turning out a high-grade product, however, employ hand sewers to sew lace on the more expensive product. One such corset factory alone employs 400 hand sewers at about $9 a week. Machines have wholly displaced handwork in the manufacture of muslin underwear, wash waists, and dresses. Heavier clothing, such as suits, coats, and skirts, still employ hand finishers at a weekly wage ranging from $6 to $15. The field is, however, quite small in this branch of the clothing trade of Worcester.

The higher type of girl, the broader education, and the greater stability of workers in the dressmaking trade stand out in marked contrast to the shifting force of the unskilled trades.[1] The larger dressmakers say they seldom take on a new worker, holding their regular force year after year. Some of their workers have been with them 10, 14, and even 18 years. Reports from 54 workers in the trade showed that only 8 had had any previous occupation, and only 3 had worked in an unskilled trade. The workers, then, in dressmaking have seldom approached this high-grade skilled trade through the unskilled trades, but the custom in Worcester seems to have been to go directly from the schools into the trade. Forty per cent of the 54 workers studied were high-school girls and 30 per cent from the ninth grade.

The opportunity for trained workers in dressmaking in Worcester, therefore, seems to be for a limited number of young assistants, a fair number of older and abler assistants, and a great number of independent or day workers, with a fair or good wage and a good range in the type of work. This situation distinctly restricts the type of girl who can be advised or expected to go into the trade. It seems to be only the efficient girl, who in the long run may get somewhere near the top, for there is not room for a large number of intermediate workers except in the corset factory.

[1] One employer of 12 girls has not taken on a new girl for 5 or 6 years. Some have been with her 14 years. An employer of 30 girls has only 1 new girl this year.

The great question is, How can the girl get sufficient training and experience to enter the trade? Doubtless she must be older, perhaps 16 or 17, and must have shown some ability to sew, else it will be useless for her to endeavor to enter the trade. This, therefore, means that the girl must not have any pressing or immediate necessity for economic independence and that she must look forward to a moderate income for some time. Although the length of working season in the trade in Worcester would doubtless give as large an immediate income as some of the factory industries, it would not be proportionate to the length of time she may have given to preparation.

The largest trade-training problem is therefore the one connected with that trade which offers the greatest opportunity. There is, without doubt, a demand for a small number of short-course trained girls, 20 perhaps, at present, each year, but there is a fair outlook that with the growth of the industry those types of shops which require young workers might develop, and that the great dearth of workers would result in the utilization of a larger number of well-trained beginners. On the whole, the situation seems to demand longer courses in which the actual trade or technical training shall be much extended, giving to the girl a two, three, or four year course. Such a course, however, would necessitate from the beginning a different plan of work from that offered in the shorter course. The longer course must get the girl somehow into the field. There are apparently certain stages at which she could enter the trade: (1) As a little more mature assistant in a dressmaking shop; (2) as a seamstress; or (3) as assistant to day workers in the home, thus gradually preparing herself to become the day worker of the simple type. As the schools develop, doubtless it will be possible and desirable to establish short dull-season courses, or perhaps short evening continuation courses for the more mature workers, in which instruction shall be given in some particular phase of the trade, such as drafting, waist draping, or designing.

(3) *Millinery:* To a great number of girls, millinery is the most attractive of all the trades, offering, as it does, unlimited opportunity for the exercise of creative ability. Unlike dressmaking, millinery still retains a system of apprenticeship by which young girls can learn the trade. This trade, at least in all but the most exclusive shops, has two fairly well-marked divisions, one requiring deftness and one artistic powers; the one a trade, the other an art. The less skilled division of work, ordinarily known as the making of hats, offers opportunity for a fairly large number of young girls who can profitably be put upon the simpler kinds of work. The dressmaking trade does not have such clearly defined divisions, so that in that trade it is difficult for a wholly unskilled girl to do any part which does not merge into the skilled processes.

The young apprentice in millinery who serves for a year without pay is put upon such simple parts of the hat as making bands and the simpler frames, putting in linings, and wiring ribbons, from which she may progress into the somewhat more complicated work of the "maker." It is in this process that she may be tried out, and the siftings result in the retention of the more able girl who may then become a maker with the power to earn a fair wage with perhaps a longer season than the trimmer. It is from this group and through this educational process that the girl with the artistic ability—the prospective trimmer—is discovered. She must be the woman of real ability and knack. It is not to be supposed that the more expert or even the less skilled maker can succeed unless she has a certain degree of millinery taste, but it is only the girl with the exceptional power who can become the trimmer.

The trade therefore must be looked upon as being almost two distinct trades—the higher being the development through the lower—and each requiring certain similar yet certain peculiar ability for success. However, into the lower trade may go many girls with moderate ability who can make a fair wage in a pleasant trade. Into the higher trade can only be admitted those with the exceptional artistic ability. As a whole, the opportunity in millinery is limited as to wage for the large numbers who may enter. It is limited as to numbers in the highly paid work.

Unlike the dressmaking trade, millinery suffers very little from outside competition in Worcester. Tradespeople say that only a few of the wealthier people buy their hats in Boston, and that the number of customers lost to each milliner in this way is so small as to be almost negligible. There are at present some 50 or 60 milliners listed in the Worcester directory, but probably not more than 20 of these employ over 1 or 2 women. Sixteen of the large establishments were visited, including the millinery shops of four department stores. These establishments report places for 52 learners a year, under the present system, and their total number of employees is about 200. Here, as in dressmaking, the stability of the workers is a marked feature of the trade. Milliners frequently reported that they had retained their most skilled employees 5, 10, or 15 years. Most of the milliners prefer to take girls over 16 years of age, and only 3 establishments were found employing girls between 14 and 16. There are opportunities in plenty for the older girl, but very few for the 14 and 16 year old girl. As the milliners say, "What can you expect of girls of 14? They are only children."

The number of milliners desiring girls over 18 years of age was 2; at 16, 4; at 15, 6; at 14, 2; indifferent as to age of workers, 2.

The number of firms employing no girls 14 to 16 years of age was 2; 1 girl of that age, 0; 2 girls, 2; 3 girls, 1; not reporting, 1.

Types of millinery shops in Worcester, illustrating kinds of workers and range of wage.

Type of shop.	Head trimmers.		Trimmers.				Makers.				Learners.	
	Number.	Wages.	Number.	Wages.			Number.	Wages.			Number.	Wages.
		Max.		Min.	Max.	Maj.		Min.	Max.	Maj.		Maj.
Millinery department of department store	1	$25	3	$12	$20	$15–$18	8	$4	$12	$6–$10	2	0
Large millinery store	1	45	10	10	45	15–20	17	3	10	6–10	3	0
High-grade custom shop	1	25	1	.....	18	.....	10	3	10	10	[1] 1 [2] 1	$3.50
Small custom shop	[3]	[3]	[3]	[3]	[3]	[3]	3	6	8	6	.....	.....

[1] Apprentice. [2] Stock girl. [3] Owner does most of trimming.

Millinery, like dressmaking, shows various stages of economic evolution, and a resultant variety of types of shops. Four fairly definite types appear in Worcester: (1) The small custom shop where the employer does most of the trimming and hires several makers at $6 or $8 a week; (2) the high-grade custom shop, employing a head trimmer at $25 a week, a trimmer at $18, some 10 or so makers ranging from $3 to $10, and an apprentice and stock girl; (3) the large millinery store; and (4) the millinery department of a department store, with correspondingly higher pay for the trimmers in accordance with degree of skill or responsibility required.

The wages therefore show a wide range for the trade as a whole, but a fairly common wage in all shops for similar work. The division requiring creative artistic ability shows a wider range, from $10 to $45, as the tables indicate, according to the amount of responsibility assumed and the degree of artistic and creative ability possessed.

Two features of millinery seem to make trade-school work possible for the girl who wishes to enter or who has entered the trade. First, it is more highly seasonal than any other skilled industry for women. Second, it is characterized by an apprenticeship system, which means that the girl who goes into the trade gives her services without remuneration for two seasons, averaging about 3 months each. Unless the girl can find some other occupation for her dull seasons, which cover about 3 months in winter and 3 in summer, she must work for a year without pay. The second year she is started on a small wage, usually not more than $3 a week, and her pay advances by degrees as her skill increases, but, as one employer put it, she does not become a "real milliner" for 2 years. Now it is a self-evident fact that both the seasonal aspect of the trade and the system of apprenticeship which prevails with most milliners tend to exclude the girl who by reason of economic pressure is obliged to get to work as soon as the law allows, and to attract the girl who can afford to

wait for the higher wage which comes with experience and a high degree of skill. Yet all the milliners visited reported a great number of girls from whom to choose. Reports from 51 workers in the millinery trade showed that 40 per cent were high-school girls and 50 per cent from the ninth grade, while none had ever worked in unskilled industries. So that in dealing with the millinery situation, the question of the child's economic ability to avail herself of trade training need not enter into the discussion. It is safe to assume that the child who can afford to go into millinery can afford to go to a trade school.

The question which does confront us, the one which some milliners ask, is whether apprenticeship in a millinery workroom does not give the child a better equipment than the training which a trade school could offer? A survey of the situation leads to the conclusion that the present system of apprenticeship leaves much to be desired from the point of view of the prospective learner. Even with the minimum age limit at 16, as is the case in most millinery shops, there seems to be maladjustment and waste. Only 3 of the milliners interviewed were able to say that most of their apprentices "made good," and 1 of these 3 would not take any learners who were not experienced sewers. Two milliners said they used their apprentices each year with no thought of retaining them when they reached the point where they could demand pay. What, then, can the trade school give these girls which the shops can not give them? A training under teachers who can take time enough to give each girl a thorough try out, their aim being to develop individual efficiency, even though the process may be long and unremunerative.

The labor situation in the millinery trade in Worcester, therefore, is much less serious than in the dressmaking trade. There is an annual demand for about 50 young girls now, showing opportunity for larger numbers than in the dressmaking trade. The opportunity is small for the girl of not much skill, but larger for the fairly skilled worker—that is, for the expert maker—and fair for the skilled trimmer. The pay for the expert maker is good and for the skilled trimmer excellent. But it must be noted that the season in the millinery trade is short.

Girls must be fairly efficient to enter and to continue in the trade. Its workers are necessarily a selected few, for two reasons. First, they must have natural ability and millinery taste. Moreover, they must acquire ability to sew and deftness in handling materials which can be developed with training. One milliner says that one of the requisites of millinery workers in a town like Worcester is the ability to make things over; to renovate, rearrange, freshen up old materials, requiring a large amount of ingenuity. Second, the girl who desires to go into millinery must be efficient, but one who need not

acquire immediate economic independence, because the trade partakes of the nature of a profession. She must be the girl with small necessity for economic independence or a larger wage for sometime to come. The more efficient girl without economic independence may be able to go into the trade, and by a brave struggle succeed, by filling in her dull seasons with anything which she may find to do; but for the less efficient it would be questionable.

A possible solution for the problem of a secondary trade appears in the valentine and fancy paper-goods factory of Worcester. The proprietor of the factory thought a large number of his workers—he employs 200 in the busy season—came from the millinery shops. Unfortunately, at present the busy seasons overlap somewhat. The time of maximum employment in the valentine factory is from September to December, although the work continues through January and February. The busy season for millinery is September and October, and for some workers, November. Since the valentines, cards, etc., are made for the next year's sale, the question arises if it might not be possible to shift the season somewhat in the valentine factory. Millinery workers might be shifted during their dull season into such a factory, and if they proved their superior ability this change would probably come about of itself. The summer season usually brings opportunities in the hotels at summer resorts for girls who are economically dependent. If some such adjustments with secondary occupations could be made, the economically dependent girl who may chance to have real ability and efficiency along lines of millinery art may find great opportunity to enter and develop her art in the trade.

What significance, then, has this situation for the trade school? There would be, without doubt, a demand on the part of a fair number for a short course, which might be offered to the younger girls in the trade school. There certainly seems to be opportunity for advanced and medium dull-season courses or evening courses, since there is a dull season of 3 months in the winter and 3 months in the summer, and since the reports of milliners seem to show a large number of girls not immediately economically independent. Finally, this economic condition might seem to indicate a moderate demand for longer courses of 2 years.

VII. SUMMARY.

Worcester is a city of factory industries which employ more than 8,000 women. Four industries—machine operating, textiles, wire and metal goods, and paper goods—receive 90 per cent of these women.

I. THE EXODUS OF YOUNG GIRLS FROM SCHOOLS.

These industries offer openings for a large number of young girls. In 1910, 700 employment certificates were issued to 14 and 15 year old girls leaving school to go to work, an increase of 40 per cent over 1905. Sixty per cent of these girls were 14 years of age, and more than one-half had not reached the ninth grade in school. Of 214 homes visited, the majority on a conservative estimate showed that economic pressure was not the impelling force of the large outgo of young girls. Yet 25 per cent of these girls had left before reaching the seventh grade, and 71 per cent were from Swedish, Irish, and American families. Such facts seem to indicate the need of additional lines of training not yet provided by the public schools which will meet the demands of the "motor-minded" girls who are not forced by economic pressure to go to work as soon as the law allows.

II. INDUSTRIES WHICH YOUNG GIRLS ENTER.

Two great industries draw more than half these girls just out of school. The machine-operating trades drew 38 per cent, the corset factories receiving the larger proportion—28 per cent, and the textile mills 18 per cent of last year's outgo. The other half are employed in mercantile establishments, metal trade and paper goods, various forms of clothing manufactures, and scattering industries which can not be considered from the industry point of view.

III. KINDS OF WORK OPEN TO YOUNG GIRLS.

The little girl of 14 or 16 has opportunity to enter only unskilled work, or "blind-alley" occupations. Even in the machine-operating trades, where there might seem to be opportunity for rise and financial advance, the opportunity is apparent rather than real; for here, too, young girls must begin on the unskilled, monotonous, and mechanical work. A large proportion of the girls either (1) lose the capacity for or fail to develop the intelligence and responsibility necessary for a higher grade of work; (2) become impatient with the monotony and discouraged with the outlook; or (3) are laid off in slack season and drop out of the trade. The masses of the young girls, therefore, not easily adapting themselves to the preliminary processes, drift from one place to another, thus learning or becoming proficient in no one trade. Hence arises the army of drifters and unskilled laborers. When they reach the age which makes them eligible for the better trades, such as high-class machine operating, dressmaking, and millinery, they have not the capacity for taking advantage of the better opportunities. The more skilled industries have no satisfactory system of training the prospective worker for the trade, so that the mass of workers who begin work in the unskilled trades remain there and have no way of bettering their condition.

IV. WOMEN-EMPLOYING INDUSTRIES.

A. The unskilled industries.—Of the four factory women-employing industries, the unskilled trades—textiles, metals, and paper goods—employ 48 per cent of the women workers. These trades in themselves offer little outlook either for self-development or for social advancement. The workers in the trade are, therefore, all the more in need of opportunity for supplementary trade development. Nevertheless, there would probably be small opportunity for these workers to profit by such courses offered in a technical or trade school except in evening schools for the more mature worker. A large number even then could not be reached because of the demands of the ten-hour working day on the physical strength of the woman worker. In the textile trades alone is found a sufficiently large number of girls to make part time work feasible. These are the workers who leave school at an early age. Therefore, it is through the unskilled industries employing children that these workers must be reached during the 14 to 16 year old period.

B. The skilled industries—(1) Machine operating: Machine operating, the remaining factory industry, employing 52 per cent of the women factory workers, presents a stage of transition from the unskilled to the skilled trades. Certain phases of machine operating, such as stitching on canvas goods and overalls, hemstitching, and tucking ruffles in muslin underwear, and the simpler and more mechanical processes in the corset factories, can not be called more than low-grade skilled work and hence command a wage ranging from $5 to $10. On the other hand, making the finer, more expensive corset, and certain processes in the better grade lingerie require a fair degree of skill, and good workers can command from $10 to $15. Machine operating in the shoe factory also requires a high degree of skill, the less skilled operators receiving from $8 to $12, while the highly skilled workers range from $10 to $25. Since, however, there are no factories in Worcester which produce a high grade of women's clothing, there is not the opportunity for highly skilled workers on the lighter and more agreeable materials that is open to machine operators in New York or Boston. Increased skill on the part of the workers might perhaps be instrumental in inducing the manufacturers of Worcester to expand their business by the introduction of a finer grade product. The introduction of a trade school might, therefore, augur the development of a more desirable product, hence broader opportunity for highly skilled workers.

The study of machine operating, therefore, shows that there is a large number of factories demanding ordinary machine stitchers at a usual wage of $7 or $8; a fair opportunity for a better class work requiring a higher degree of skill, as in the better corset factory, where a wage of $12 to $15 may be secured; and finally, opportunity

for a large number of operators in the manufacture of lingerie, with a range of from $5 to $15 but a usual wage of $8.

It must be remembered, however, that this trade is not one to attract the girl of great ability, but rather the girl of moderate ability or the girl in pressing need of economic independence.

(*2*) *Dressmaking.*—But two industries in Worcester offer opportunity for a high grade of skill, dressmaking and millinery. The dressmaking field is restricted from the standpoint of the prospective worker in two ways; first, because of the small number of large shops, and, second, because of the comparatively few highly paid positions, a natural consequence of the small shop. This may, however, be due partly to the dearth of skilled workers in the trade. This dearth of workers has come (1) because of the disappearance of the apprenticeship system as a means of access to the trade, (2) because the dressmaking trade has more of a professional character and necessitates a longer period for training and development, and (3) because of the increasingly higher degree of natural ability and artistic taste required by the trade.

The dressmaking trade is therefore primarily a trade for the girl of natural and artistic taste and the girl without the necessity of immediate economic independence. There are openings for only about 20 young workers, with a year's training, to enter the trade each year at present. The outlook as to numbers and large pay is not, under the existing system, very great, though the availability of trained workers might enlarge the opportunity both for larger numbers and for higher pay. Plain sewers in custom shops or corset factories receive from $6 to $10, a few head waist and sleeve girls range from $12 to $18, and two head waist girls receive $20 and $25, respectively. The beginnings only of specialized work and workers can be seen at present. The large opportunity is distinctly that of the day worker at from $1 to $3.50 per day, and the independent worker, whose wage possibilities can not be discovered. This requires, however, larger experience than is apparently now available through shops.

(*3*) *Millinery.*—Millinery, unlike dressmaking, still retains a system of apprenticeship by which young girls can learn the trade. The labor situation, therefore, is less serious than in the dressmaking trade. Millinery, like dressmaking, is primarily a trade for the girl of natural and artistic ability, and even more than dressmaking a trade for the girl without the necessity of immediate economic independence, because of the short seasons. In spite of this fact the millinery trade can choose from many aspirants to the trade.

The shops of Worcester offer opportunity for about 50 new workers annually under the present system and about 200 altogether. The trade has two fairly definite divisions. One, requiring deftness and some millinery taste, employs the majority of workers, called "mak-

ers," who range from $3 to $10. The other, requiring a high degree of artistic sense and skill, offers opportunity for a smaller number, but at a higher wage. The ordinary trimmers range from $12 to $20, though two were discovered at $25, and one in charge of a large force at $45.

V. CONCLUSION.

The industries in which women are and can be employed in large numbers may be divided into three groups:

1. These are industries in which the processes are so mechanical that but little training is required for their operation, such as the textile mills, the paper industries, and the metal trades. In the paper and metal industries comparatively few young girls are employed. Therefore, their training must have been reached either by remaining in school until they were 16 or 17, or while they were engaged in some of the child-employing industries. For such trades, consequently, the industrial training must either be offered in connection with the regular school work, or in connection with the child-employing industries, as part-time (continuation) instruction or as evening work for the older girl. In the textile industries, however, girls are being employed. Here, also, is the problem of all our great textile centers. Since the industry itself has but little promise for the woman, it would seem that the girls here employed should be given some part-time (continuation) instruction, which would develop greater intelligence in their industry and at the same time a knowledge of those trade processes which would enable them to contribute to their economic welfare in the home, such as the use of the needle and the knowledge of domestic work. This type of evening courses for mature workers is doubtless that which should be given to those who are employed in the other trades (metal and paper trades). Similarly, the mercantile establishments attract 163 girls and afford one of the chief avenues through which girls who will enter other industries later may be reached. If they can not be drawn away for trade courses, they should be taught, as would the girls in the textile industry, through part-time instruction.

2. The second group of industries contains those in which the processes require a larger or smaller amount of skill according to the type of work being done, and for which there is a possibility of fundamental training which shall not only contribute greater intelligence in the less skilled part of the processes, but shall afford a power to advance to the more highly skilled work; such an industry is the machine-operating industry. The training for this industry must always be considered as looking toward a probable medium wage as great as in any of the other industries and toward work far more desirable in character, but at the same time offering a possibility for the more intelligent to attain a wage suitable for highly skilled work.

There are in this industry large numbers of children, as has been shown. The majority of these children do not pass up into the advanced work and should be drawn away from the industry for a shorter or longer course, as seems possible, so that when they do enter these unskilled parts of the trade their knowledge and their intelligence will afford them opportunity for continuous advancement. Or to these children should be given part-time instruction which would fit them for the skilled processes, and enable them to pass on to the higher type of machine operating.

This is the great industry for women in Worcester in which there is a possibility for training and for the development of skill. It is, therefore, upon this industry that training should be concentrated, giving as large an opportunity as the children will accept for shorter or longer preparation, in the technique of machine operating, but supplementing this course with training in the needle trade and in domestic economy. It seems probable that any plan for training should also contemplate three features as a later development. Part-time training might be anticipated for the younger girls who can not be prevailed upon to give full time for even a short period; specialized operating for those who have been able to take only a short period of training; and evening work on special machines for the ambitious young woman who is now in the industry.

3. The group of industries in which there is the opportunity for the most highly skilled work and therefore for the highest industrial opportunity and wage, dressmaking and millinery, is found to a limited extent in Worcester.

In dressmaking, the outlook is distinctly for the mature and independent worker. But the field is extremely limited, and the means by which the young worker, even with a certain amount of training, can secure experience or training are lacking. Both of those conditions are due to the small number and small size of the specialized shops. Both offer special problems for solution in connection with trade training, and must affect the kind and length of courses given. Only a small number, perhaps not to exceed 20, should therefore be given a short or one year course of training, since opportunity to enter the trade at the bottom and work up is at present so limited. Similarly, longer courses, two, three, or four years, in which the more advanced principles are taught, seem essential. Dull-season courses for the girl with a shorter preparation, or evening courses teaching certain definite parts of the trade to the older girl with a professional attitude, would probably necessarily follow in the development of the training. To this work, therefore, would be directed the girl with that type of ability which makes for success in the trade, and only the girl without pressure for immediate self support, or with force of char-

acter sufficient to overcome the difficulties of a long and unpaid or low-paid apprenticeship period.

Millinery is also a highly skilled trade with limited opportunities in Worcester, as it now exists. Consisting of small shops with a few helpers, it doubtless affords better opportunities proportionately than dressmaking, with the exception that the seasons are very short. But the call is chiefly for the skilled maker and the trimmer. The girls who now enter are usually more mature and less self dependent, but the apprenticeship training is apparently unsatisfactory. One or two year courses therefore seem desirable, and a scheme for dull-season courses would probably be distinctly popular.

4. A trade school for girls in Worcester should certainly emphasize the courses in machine operating and part-time instruction. Here is a field for constructive work and distinct initiative. The city must face the problems of all large industrial centers, but it differs from Boston or New York in that it does not have the large demand for the highest type of feminized industries. On the other hand, it differs, probably, from the textile centers in that it has a very large and rapidly growing industry which demands the skill gained in the factory. In this respect it will therefore doubtless teach such centers as parts of Boston, the shoe centers of the State, and similar industrial towns.

The trade school can not properly duplicate the Boston trade school. It will contain the same trades, but the emphasis and proportion must be different. The Boston trade school did and should accentuate the dressmaking and the millinery as the best fields for girls with certain aptitudes, and as unrestricted in types of development. The Worcester trade school must offer these trades with guarded care as to numbers, types of girls, and types of opportunities. The Boston trade school offered machine operating, but it has been properly an outgrowth of experience and dependent on the increase in size of the school. The Worcester trade school should attack this trade as its most important and most immediate problem.

These conclusions suggest, therefore, the establishment of a trade school with a short course in machine operating. Instruction should be given to a fairly large group at once in order to demonstrate its efficiency. It may prove necessary to secure part-time cooperation with some machine-operating industry as an entering wedge, or to consider such a scheme as feasible for the immediate future. It should look forward to rapid development in the variety of specialized machines; to rapid increase in the number to whom instruction could be given; and in the length of course which shall be offered, either increasing the unit of time or introducing larger units. The trade school should also offer one-year courses in dressmaking and millinery at once. These will be doubtless limited in size at first by

the number of applicants, but the effort should be to restrict the number admitted to these courses, and development should distinctly be in the introduction of longer unit courses. Dull-season courses and evening courses will doubtless in time demand consideration. The trade school will surely feel itself bound in due time to meet the needs of the larger number of workers in the machine-operating industry, through part-time courses. It also will have before it in the future the welfare of the young workers in textiles and in the mercantile establishments, unless they may have been drawn away from these less desirable occupations. The necessity for the immediate and intensive attention to machine operating indicates the importance of securing opportunity for solid permanent and expanding housing, in order that installing machines should be conducted as economically as possible.

VIII. PRESENTATION OF MATERIAL IN TABULAR FORM.

TABLE I.—*Showing women-employing industries of Worcester.*

(Based on factory inspector's report.)

Industries.	Number of establishments reported.	Number employed.				
		Total.	Men.	Women.	Boys.[2]	Girls.[3]
Boots and shoes	7	1,131	732	399	14	16
Clothing	26	703	102	601	.....	22
Corsets	6	1,786	152	1,634	.....	149
Envelopes and paper goods	10	1,513	576	937	25	39
Laundries	13	229	.....	229	.....	.....
Leather goods	4	1,028	925	103	37	13
Narrow fabrics	4	332	33	299	.....	59
Textiles	18	2,926	1,562	1,364	129	121
Thread	2	130	35	95	.....	2
Underwear	5	901	92	809	.....	4
Wire and metal goods	39	9,024	7,917	1,107	222	62
Miscellaneous[1]	34	1,423	1,048	375	57	26

[1] Miscellaneous: 2 emery factories; 4 piano factories; 1 drug; 2 food; 1 printer; 4 casket factories; 1 machinery brush; 1 comb; 1 cigar; 1 yeast; 1 dyeworks; 6 paper-bag factories; 1 bookbinding; 6 newspaper; 1 heel; 1 unclassified.

[2] Included under men.

[3] Included under women.

Of the women-employing industries of Worcester, envelopes and paper goods, narrow fabric, textiles, thread, and wire and metal goods employ almost one-half (47 per cent). Boots and shoes, clothing, corset, and muslin underwear employ about two-fifths (43 per cent) of the women.

TABLE II.—*Showing women-employing industries visited.*[1]

Industries.	Number of establishments visited.	Number employed.		
		Total.	Women.	Girls.
Boots and shoes	3	145	107	38
Clothing	6	359	341	18
Corsets	3	2,324	1,955	369
Dressmaking	10	207	191	16
Millinery	16	276	249	27
Paper goods	3	653	535	118
Textiles	5	807	756	51
Underwear	5	570	550	20
Miscellaneous[2]	4	127	87	40

[1] The difference in the date of visit may explain the discrepancies between these figures and those reported by the factory inspector, as shown in Table I. This statement does not include some establishments visited which were not on the inspection list. Hence, totals used in the text are often formed by a combination of the reports of the inspector and of the investigator.

[2] Miscellaneous: 1 leather-goods factory; 1 thread factory; 1 wire factory; 1 fancy-biscuit factory.

The representative character of the study will be seen from the following proportion of industries which were visited and studied:

Boots and shoes.—3 out of 7 establishments employing 27 per cent of the women in the trade.

Clothing.—All the clothing establishments.

Corsets.—3 out of 6 establishments employing more than the total number reported by the factory inspector.

Envelopes and paper goods.—3 out of 10 establishments employing 57 per cent of the women in the trade.

Textiles.—5 out of the 18 textile manufacturing establishments employing 55 per cent of the women in the trade.

Muslin underwear.—All of the underwear factories.

TABLE III.—*Showing ages of girls (727) leaving school during the year September, 1909, to September, 1910, according to age and schooling certificates.*[1]

Age.	Number.
Under 14 years of age[2]	7
14 and under 15	431
15 and under 16	177
16 and under 17	24
17 and under 18	4
Unclassified	84
Total	727

TABLE IV.—*Showing grade of leaving school during the year September, 1909, to September, 1910, according to age and schooling certificates.*

Grade.	Number.	Grade.	Number.
Third grade	6	Ninth grade	130
Fourth grade	2	High school	44
Fifth grade	53	Unclassified	180
Sixth grade	89		
Seventh grade	127	Total	727
Eighth grade	96		

[1] Sixty per cent of these girls who had left school were only *14 years old.*

[2] Under 14 years of age, 7, viz: 11 years 10 months, 13 years 2 months, 13 years 5 months, 2 of 13 years 10 months, and 2 of 13 years 11 months.

So far as the age and schooling certificates enlighten us, 17 per cent of those who reached the ninth grade remained until the end of the year, but the statistics on this point are undoubtedly incomplete.

Twenty-one per cent of the girls withdrawing from school the past year left before completing the sixth grade. About one-third dropped out in the sixth and seventh grades. More than one-half dropped out before reaching the ninth grade.

TABLE V.—*Showing educational status of 214 families visited.*

	Number.
Educated	6
Intelligent	124
Ignorant	44
Unclassified	40

Fifty-eight per cent of the girls leaving in the past year who were visited came from intelligent families.

TABLE VI.—*Showing types of homes, on same basis as Table V.*

Comfortable	118
Lacking in comfort	36
Poor	34
Unclassified	26

Fifty-five per cent of these girls visited came from really comfortable homes.

One-half, on a very conservative estimate, left school without economic pressure; and of these almost one-half were 14 years old, 25 per cent had not reached the seventh grade, and 60 per cent could not have passed the ninth-grade test.

TABLE VII.—*Showing nativity of 214 girls visited.*

Visited in homes:	
Scandinavian	46
Irish	44
American	40
English	17
Canadian	14
Russian	9
Italian	7
Jew	1
Finn	1
Syrian	1
Lithuanian	1
Pole	1
Turk	1
Scotch	4
German	2
Colored	1
No data	24

	14 yrs. old.	15 yrs. old.
Leaving without economic pressure:		
Swede	14	14
American	10	8
Irish	9	9
French	5	2
Canadian	3	5
English	1	4
Italian	1	
Russian Jew	1	
Pole	1	
Scotch		1
Russian		1
No data		125

TABLE VIII.—*Showing occupation of girls who left school during the year 1909–10. (Based on age and schooling certificates.)*

Mercantile establishments	163
Manufactures	549
Miscellaneous	15
Total	727

(*a*) *According to industry:*

Manufactures into which girls go from school (showing the predominance of one great type of industry—machine operating—as a girl-employing industry).

	Girls.
Corsets and accessories	206
Textiles, spinning, knitting	104
Metal trades	71
Paper goods	46
Clothing, factory product	36
Shoes and leather	33
Food and drug products	21
Millinery	8
Novelties	5
Dressmaking	3
Brushes, combs, rubber	3
Laundry	4
Printing	2
Piano company	1
Vaudeville	1
Miscellaneous	5
Total	549

Of the 727 girls, 22 per cent entered mercantile establishments, 75 per cent went into manufactures, 38 per cent entered machine-operating trades, and 28 per cent entered corset factories.

(*b*) *According to type of industry:*

1. Unskilled trades—

Textiles, spinning, knitting	104
Metal	71
Paper	46
Food and drugs	21
Novelties	5
Brushes, combs, rubber	3
Piano	1
Vaudeville	1
Miscellaneous	5
Total	257

2. Medium skilled trades—

Corsets and accessories	206
Clothing	36
Shoes and leather	33
Laundry	4
Printing	2
Total	281

(*b*) *According to type of industry*—Continued.

3. Skilled trades—	
Millinery	8
Dressmaking	3
Total	11

Of these girls, 22 per cent entered mercantile establishments, 35 per cent entered unskilled industries, 39 per cent entered medium skilled industries, and 1 per cent entered skilled industries.

No tabular statement of the wages and conditions in the industries is presented, since the studies are type studies only.

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THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY

HELD IN WASHINGTON, D. C.
FROM SEPTEMBER 16 TO OCTOBER 5, 1912

I. Some Lessons and Suggestions from the Exhibition

By FLETCHER B. DRESSLAR
Specialist in School Hygiene and Sanitation
Bureau of Education

II. Digests of Some of the Papers Presented at the Congress

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., March 20, 1913.

SIR: The Fifteenth International Congress on Hygiene and Demography, held in Washington City in the autumn of 1912, was a notable event in the history of sanitation and in the discussion of the conditions of the physical and mental health of the people. The exhibition held in connection with the congress was instructive in many ways, and contained much of interest to those who are responsible, directly or indirectly, for the health of children.

The first section of the accompanying manuscript contains brief and accurate descriptions of some of the most important of the exhibits, and comprehensive summaries of their meaning. The second section consists of excerpts and summaries containing the gist of some of the most important papers read at the congress. I believe both will be permanently helpful to teachers, school officers, and others interested in the health of children and the sanitation of homes, schools, and other places in which they work. I therefore recommend the publication of the manuscript as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

INTRODUCTION.

The exhibition arranged under the direction of Dr. J. W. Schereschewsky, of the United States Public Health Service, in connection with the Fifteenth International Congress on Hygiene and Demography held in Washington the latter part of September, 1912, was in many regards a remarkable one. To those who had no time to spare in making a careful and critical examination of the materials and facts presented, as well as to those who strolled through the various sections out of mere curiosity, the multiplicity of details was doubtless overpowering and perplexing. Those, however, who had time to examine carefully and to classify and unify the complex materials presented, saw that comparatively few hygienic principles were involved.

When people have pure food, pure water, pure air, and are freed from the dust of houses, streets, and manufacturing industries; when they have good light and abundant sunshine, sanitary houses, barns, and outbuildings; when they are protected from germ-carrying agencies, such as flies, mosquitoes, rats, mice, and all such pests; when they are protected from people who are carriers of disease germs, and taught how to disinfect their homes and communities; when they are taught to work and play, eat and sleep, dress and bathe, according to the laws of health; when they learn to care for their teeth and their eyes, the main problems of hygienic living will be solved and human life relieved of its greatest sources of suffering and disease.

The attempt has been made in Part I of this bulletin to describe in a brief way some of the suggestive exhibits presented in connection with this congress. In no way does it attempt to give an adequate idea of the extent and richness of the exhibition as a whole, but merely to select a few exhibits that had more or less direct bearing on school work and school conditions.

Part II is made up of abstracts from a few of the papers presented at the congress. A volume containing these abstracts was printed by the congress in English, and those here reproduced have been taken from this volume, with few changes.

THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

PART I.

SCHOOL BUILDINGS AND SCHOOL SANITATION.

In connection with the various State health exhibits, many photographs of school buildings were exhibited. Most of these represented good buildings, constructed in such a way as to aid in conserving the health of the children. Some were bad. The most common faults consisted in imperfect illumination and inadequate arrangements for ventilation, for ridding the air of soot and dust, and for properly humidifying the air in the colder climates.

The problem of inducing architects and schoolmen to locate the windows in schoolrooms in the proper places, and to orientate their buildings in such a way as to take the best possible advantage of the light, is, it seems, an almost hopeless task. By the side of conspicuous placards lauding the value of sunshine as a disinfectant and of good light as a means of conserving the vision of the children were to be found school buildings officially commended, but so constructed that not a glimpse of sunshine could ever enter some of the classrooms for the elementary grades, while the windows were badly placed in others. The officers of State boards of health are doing a great service, but some of them must learn that the correct planning of a schoolhouse is not a matter that can be picked up incidentally. Bread pills mixed with a big dose of dogmatic assurance concerning their curative properties, discreetly given, might establish an enviable reputation; but a poorly constructed schoolhouse demonstrates its defects every day to teacher and pupils. It is to be hoped, if State boards of health are going to take a large part, directly or indirectly, in the supervision of the construction of school buildings, that they will make a thoroughgoing study of all the problems involved.

The exhibition of knock-down models of rural schoolhouses presented by the United States Bureau of Education attracted a good deal of attention. This exhibit consisted of 6 models; 3 illustrating varieties of one-room buildings, and 1 each of a two, three, and four room building. The main purpose of exhibiting these models was to set forth a plan by which the bureau will undertake to help the rural

districts to better types of school buildings. The chief obstacle which has so long blocked the way to progress in securing better types of rural schoolhouses is the inability or unwillingness of rural school trustees to employ a competent architect to plan their buildings and supervise the construction. The so-called architect and builder, or more often the ordinary "hatchet-and-saw" carpenter of the country, generally builds a schoolhouse by copying the plan of some building in a neighboring district, which in turn has been copied from some other one. As a result the progress in constructing better and more beautiful buildings is slow and uncertain. It seemed that progress in these regards might be accelerated and guided by preparing some carefully planned models, in a knock-down form, to be sent directly to district trustees or to county superintendents, then set up and copied by the carpenters who are called on to build rural schools. The floor plans, elevations, and all parts of these models were drawn to scale.

Three of the models, 2 one-teacher buildings and 1 three-teacher building, were constructed by Cooper & Bailey, architects of Boston, and 1 one-teacher building, 1 two-teacher building, and 1 four-teacher building, were constructed by Mr. W. B. Ittner, the school architect of St. Louis. The floor plans were furnished by the Division of School Hygiene and Sanitation of the Bureau of Education. Duplicates of these models have been prepared by the Bureau of Education and are loaned, on request, to those who can use them in building schoolhouses.

A model and numerous photographs illustrated types of reenforced concrete buildings. The model shown was for a concrete building suitable for use in a one-teacher district. These concrete buildings were designed particularly to meet the most advanced demands of State regulations for fire protection. They are literally fireproof. A special feature claimed for these buildings is their economy from the point of view of construction and repairs. Public School No. 5, at Irvington, N. J., has been in use four years, and the statement was made that not 1 cent has been spent on it for repairs. By the unit system, buildings of factory-made concrete parts are now being put up that "are fireproof, weatherproof, dust proof, soundproof, and sanitary," at a cost less than if built of brick or wood. Photographs were exhibited of many large school buildings constructed of reenforced concrete at a smaller cost than the estimates submitted for the construction of the same in brick and wood.

Such an exhibit as this is encouraging, for there can be little doubt that under many conditions the best and safest material to use in the construction of school buildings is reenforced concrete; and when it is found that the first cost may be less rather than greater, it will cause more school architects to plan for the use of concrete.

Glass blackboards.—Several glass blackboards were on exhibition. It is claimed for these blackboards that they are absolutely non-absorbent; that they will not crack, craze, or deteriorate in any way; that they are cleaned with a plain rag much more easily than the ordinary type of board. Since the idea of glass blackboards will be new to many people, the following brief description of how they may be made by any careful workman may not be amiss:

Take a pane of heavy glass, the size desired, lay it flat on a table, and with good quality of fine emery dust mixed with a pure thin oil scrub it all over so as to cut the surface evenly, completely, but lightly. Some skill will be required to do this, but no one ought to fail. Some time will be required, and a good deal of labor to prepare the surface satisfactorily. When this is done roughen the back side slightly in the same way and paint it the color desired.

Set the glass with the painted side against the wall as slate is set, leaving the finely and carefully cut surface on the outside for the crayon, and the board is ready. It is almost unnecessary to say that the color on the back side seems to be a part of the glass itself. Such a blackboard can be washed or scrubbed without damage, and will absorb neither oil from the hands of the children nor water from a sponge. If made well it will cut the chalk readily, will show a good mark, may be easily cleaned, and it improves with use. Glass blackboards are the most sanitary boards thus far devised, and of course will last indefinitely unless broken by accident.

Drinking fountains.—Various kinds of sanitary drinking cups and drinking fountains were on exhibition. In addition to those forms generally known and of proved value, there was a new device for sterilizing drinking cups. This consisted of four aluminum cups so connected with a machine that while one cup is filling, another is sterilized by an alcohol flame, so that while the same cups are used again and again, there is no need of anyone drinking from a cup that has not been thoroughly sterilized. This device, while it offers an opportunity for complete sterilization, is neither practicable for ordinary school systems nor absolutely safe, for there is nothing to prevent one child from drinking a part of the water from a cup and then passing it to another. Besides, it is an expensive apparatus, and likely to be very troublesome for children to manipulate.

Many varieties of sanitary paper drinking cups were shown, accompanied by convenient devices for holding them. These are both sanitary and inexpensive, but nothing of this kind is likely to prove satisfactory where large numbers of school children must drink quickly and safely. Paper cups are especially valuable in hotels, railway trains, and other public places where it is impracticable, for one reason or another, to use bubbling fountains. They will not

prove satisfactory for large schools, and especially for the primary grades.

Several types of bubbling fountains in connection with ordinary water jars, or coolers, have been manufactured for use in rural schools, where waterworks systems are not found, or even where a pressure tank is not used. Two kinds of such fountains were on exhibition. These will prove very helpful to country and village schools, and deserve the attention of all who are seeking to avoid the menace of dirty buckets and common drinking cups.

There were two exhibits of paper towels for use in schools and in public places generally. The use of these towels will greatly simplify the problems of cleanliness and prevent the possibility of the spread of eye or skin diseases. They are put up on rollers and in pads, so that they may be used economically and with perfect cleanliness. Where carefully supervised, and where the children are taught to use them properly, they have proved acceptable and have brought great relief from the trouble and expense of individual towels. The use of the common roller towel in schools or public places should be forbidden by law everywhere.

Among other materials, devices, etc., included in the exhibition, which have a bearing on school sanitation, may be mentioned a new material for flooring, made by a New York concern. In appearance it resembles artificial stone, but it is of light weight, comparatively noiseless, nonabsorbent, and, it is claimed, is not a rapid heat absorber. It is easily cleaned, can be made in several colors, and is thoroughly fireproof. This material deserves the attention of school architects and schoolmen, with especial reference to its use in halls and domestic-science rooms.

The Forsyth Dental Infirmary for Children.—One of the most significant facts connected with the movement for conserving the teeth of children is the founding and endowment at Boston of the Forsyth Dental Infirmary for Children. A beautiful model of the building now under construction at 140 Fenway was exhibited. This institution was founded by John Hamilton Forsyth and Thomas Alexander Forsyth in memory of their brothers, James Bennett and George Henry Forsyth. It was incorporated in 1910, and has an endowment of $2,000,000.

> It will offer opportunity to all deserving children under 16 years of age to obtain freely expert advice and care for their mouths. * * * Its functions will include not only care of the teeth, but also related conditions, including defective palates, adenoids, etc. Much of the work it will be called on to do in its early years will deal with the cure of defects already established. It is expected that, as its scope enlarges, it will have to do in great part with the prevention of defects by oral prophylaxis.
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> Apart from the actual work on mouths, it is expected to furnish valuable practical teaching in oral hygiene. Just as the sanatoria for the cure of tuberculosis have served

as centers for the dissemination of wisdom concerning personal hygiene by the example and teaching of their patients, so it is expected that this institution will promote public education in not only oral, but also general hygiene.

Provision has been made for research. A research fellowship has been established and is now held by a man selected for his fitness. The laboratory will be so equipped as to offer opportunity under expert supervision for special work in research by men who desire to do this work.

The museum of the institution, it is hoped, will be a depository for materials of every kind which can be used for the teaching of oral hygiene. The lecture room will be used for the education of the public in dental matters.

The building is to be a model in all those things which will insure hygienic conditions for operators, research workers, and the children.

Dental clinic.—A fully equipped dental clinic was a feature of the exhibit, and dentists were in attendance, busily examining the mouths of children. The object was to show the method of making an examination of the teeth of children in the public schools, and of keeping a record of the same. The examinations were made in an aseptic manner, the only instruments being a bit of wood of suitable size and shape, which was used but once, and a mouth mirror which was carefully sterilized by the assistant after each examination; the hands of the operator never touched the child. It was designed to call attention to the importance of the examination of the mouths of school children, as it is recognized at the present time that a large number of the general infections result from neglected mouth conditions. An operative clinic in connection with the examining clinic was conducted simply as a demonstration of the methods of working for school children from charts after the examinations had been made. It may be interesting to state that the operators obtained their material—children—through the cooperation of the Associated Charities, and they could have had an almost unlimited amount of material, the conditions were found to be so distressing.

Charts were conspicuously displayed bearing inscriptions such as these:

The temporary set of teeth is equally as important as the permanent set. Childhood is the growing period, when the body should receive the maximum of nutrition. Food can not nourish unless properly masticated and prepared for absorption.

The child who has defective teeth is more easily a prey to all infectious diseases.

Spiral fire escape.—An interesting exhibit was a model of a spiral fire escape in which, to the delectation of visitors, china dolls were sent safely down from imaginary tall buildings. The essentials of this fire escape consist of a large steel cylinder with a spiral slide securely fastened to the sides and to the central axis. From each floor of the building to be protected there is a metal runway from the building to an opening into the spiral. When, therefore, the fire escape is to be used, the children march out and jump into the spiral, feet foremost, and gravity does the rest. The danger from clogging

the spiral is negligible, and the danger from landing below is very slight. It is to be hoped, however, that fire escapes *per se* will soon be useless, for there is now no excuse for the construction of non-fireproof buildings for school purposes, especially in cities.

The dust problem.—Most people know in a general way that it is unwholesome to breathe dust, whether it is found in the air in buildings or outside, for dust particles are not only deleterious in themselves by irritating and loading the mucous membranes of the air passages, but they carry with them great numbers of bacteria, pathogenic and nonpathogenic. The problem, then, of clean air is closely linked to the problem of ventilation, as well as to that of general sanitation.

One of the hard problems in school sanitation in cities has been that of ridding the air of dust and soot before it is introduced into the schoolroom. It will not be such a difficult problem to keep the air of school buildings free from dust if the janitor is able to take from the floor most of the dust carried in by the children before it is lifted into the air.

There was demonstrated at the exhibition a type of oil brush that may be used to sweep all kinds of floors. The brush is fitted with a reservoir containing plain kerosene oil. When the brush is properly used the light row of center tufts on the brush is kept just moist enough with the kerosene to dampen the dust and roll it together, but not to oil the floor. The brushes are made in numerous styles and sizes. They are already in practical use in many schools in the West and in some of the public buildings at Washington. Such a brush deserves careful consideration, especially by country and village school officials, where muddy shoes are so common and where dust is consequently a serious problem within the room.

Several varieties of sweeping compounds designed to gather and hold the dust when floors are swept were exhibited. These are on the market and need no special mention here. A good quality of sawdust moistened with paraffin oil is a good substitute for these compounds, though some of the preparations on the market have advantages in holding the dust, and they are not prohibitively expensive. Experiments made with such a compound by Dr. Alvin Davison, professor of biology at Lafayette College, proves its use in gathering up germs. He says, in a pamphlet on "Dust as a Carrier of Disease in the Schoolroom," that "in sweeping an ordinary schoolroom the preparation used was able to catch and hold fast more than a hundred million germs."

For floors and walls there were mops, cloths, and brushes impregnated with a chemical which causes them to catch and hold the dust. These mops, cloths, and brushes are washable after use, and when thus cleaned can be used repeatedly. Many of them are particularly

useful for schools. In this connection may be mentioned the janitor-size handle duster for cleaning walls.

All of these are much more efficient than damp cloths or any ordinary dust cloths. They, of course, are as applicable to home use as to school use. It will be worth the while of school men to examine these brushes and test them by the actual and regular work set for their janitors.

A very instructive exhibit by the Massachusetts State Board of Health showed specimens of dust taken from machines operated by workmen and gave a vivid suggestion of how the lungs of workmen are exposed to all sorts of irritation and unwholesome conditions. This exhibit showed 20 varieties of dangerous dusts. Among these were noted: Dust from raw cotton, this dust being carried from the field from the time it is picked until it reaches the mill; jute fiber dust, broom-corn fiber dust, rattan dust, celluloid dust, dust from fur, and from various stages in the manufacture of leather and many other commodities.

Photographs were exhibited showing many ingenious devices to prevent the entrance of dust with the inspired breath. Not only must the dust be drawn from the rooms by exhaust fans to make some manufacturing industries safe, but the eyes of the workmen must be protected by strong glasses, and they must breathe through various forms of protecting absorbents to avoid the dangers of noxious fumes and deleterious gases. Progress in controlling "industrial dust" was shown in many exhibits, and this augurs well for better care of the workers of the future.

Cleaning and humidifying the air.—A complete air-washing and humidifying device was exhibited, the essentials of which are as follows:

The air to be used in the school building or manufacturing establishment is drawn through a chamber in which a battery of spraying nozzles are situated. These sprays are so set, so constructed, and operated that the water is broken into a fine mist and driven directly into the teeth of the incoming current of air. As a result, the dust particles in the air are laden with moisture and the space between the gaseous atoms composing the air, filled with moisture; or, in common parlance, the air is completely saturated. The air then strikes a system of zigzag eliminator plates set vertically, over which sheets of water flow. The moisture-laden dust is caught by these streams of water and carried into a settling tank below, or directly to a waste water pipe. The saturated, washed air is then heated, if heat is required, or in warm weather driven directly into the rooms. The controlling devices for regulating the temperature of the water in the spraying nozzles, and the temperature of the air driven into the rooms, are essential elements in regulating the percentage of satu-

ration. Excellent results may be expected where such machines are properly installed and operated. One practical difficulty is suggested, however, and that is that a machine as carefully planned and built as this requires skill and brains on the part of the operator in order to obtain the best results. The ordinary school janitor is not competent to handle it and keep it working as it should and would with more intelligent supervision. This difficulty, however, is due to the fact that our general janitor service is at fault. The janitor of a modern up-to-date school must be trained to work with modern machinery, if school sanitation is to keep pace with the demands of health conditions. Business concerns put such machinery under the control of trained engineers.

If school buildings in cities could be removed from the smoke and dust zone and placed in large grounds, there would be less need of washing the air. But the need for humidifying the air in cold climates is generally recognized by all students of school hygiene.

Schoolrooms where dry air is troublesome will be able to relieve this dryness somewhat by the use of a device in the exhibition consisting of a wheel-shaped affair made with crossed porous tubes attached to an ordinary electric fan. The tubes as exhibited were fed with a fragrant compound of oil of pine needles, oil of sweet birch, oil of sandalwood, and eucalyptol. This gave a delightfully refreshing odor and added some moisture to the air. They could be made larger and set in a hot-air chamber and fed with water. This device has been in use in Germany for a number of years. It is not claimed that the apparatus will properly humidify the air; it will, however, alleviate to some degree the conditions in a schoolroom where the air is dry and malodorous.

Sanitary toilets.—It is almost futile to have clean schoolrooms, sanitary drinking fountains, and the other modern means of preserving the health of the child in school unless equally great attention is paid to the sanitation of the school toilet, whether in the building or out of doors. In the first place the lesson of contamination needs to be continually driven home. Early life is intricately bound up with it, and unless we teach the children of to-day what is wrong with most of our sanitary arrangements, and how they can be made right, the parents of to-morrow will be as much at fault as we are to-day.

The accompanying illustration of a model exhibited by the United States Public Health Service shows as simply as is possible what happens in too many instances on school grounds or on the farm. The scene is a typical attractive farmhouse, but the modeler for our purpose has cut away the earth which hides from us the unpleasant underside of the picture. The well is bored deep—there can be no complaint on that score. The arrangement of the strata, however,

MODEL SHOWING WELL POLLUTION.

tells the story of contamination. From the privy the waste oozes through the porous layer into the fissured rock. Through these fissures it goes until it strikes the layer of impermeable clay between the rock and water-bearing strata. Not being able to get through the clay, it follows the slope and soon reaches the well bore. On the other side of the well the waste from the stable penetrates similarly the porous layer and works down through the fissures in the rock until it too finds a resting place in the already contaminated well.

The problem of the farm and school privy, therefore, is one of arresting the waste before it can get into the ground and contaminate the soil and the water supply. How much can be done to remedy the usual bad condition by making certain changes in the sanitary arrangements of the old-fashioned closet is seldom realized.

The United States Public Health Service showed a number of models of sanitary privies that are a striking contrast to the typical school and farm building. These privies are, first of all, properly ventilated, in forcible contrast to the prevailing type, and the openings to provide ventilation are carefully screened. The waste matter, instead of entering the ground on its journey to some well or spring in the vicinity, is caught in a sanitary container, where it can be easily treated to remove the great mass of objectionable matter.

The L. R. S. privy was shown, the principle of which is as follows: The solid matter is liquefied, and the liquid that issues from the container is of small volume, very much less dangerous to health, and can be easily sterilized if desired. The construction of this privy is not expensive, and it can be built to serve any country school. An account of sanitary privies, with illustrations, may be found in Bulletin No. 37, 1910, of the United States Public Health Service, and may be had from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents.

School desks.—The proper adjustment of school desks is still a problem, as the ideal hygienic school desk has yet to be made. In addition to a number of the usual styles of school desks, a special desk for crippled or abnormal children was displayed. The chair accompanying this desk has an adjustable sloping back, and the desk itself is adjustable to different heights. A special feature of the adjustable chair seat for crippled children is the hinged section, which remains up or down according to the needs of the child; that is to say, if the child has a stiff leg, the seat may be adjusted to its support without discomfort to the child. Several examples of movable seats were shown, and a special plea was made in connection with this exhibit for this type of seat. Attention was called to the danger of forcing pupils to sit at a fixed desk of specific size. The literature

distributed by the exhibitors quotes Dr. Montessori to the following effect:

> The principal modification in the matter of school furnishings is the abolition of desks and benches or stationary chairs.
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> I know the first objection which will present itself to the minds of persons accustomed to the old-time methods of discipline—the children in these schools moving about, will overturn the little tables and chairs, producing noise and disorder—but this is a prejudice which has long existed in the minds of those dealing with little children, and for which there is no real foundation.
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> Swaddling clothes have for many centuries been considered necessary to the newborn babe, walking chairs to the child who is learning to walk. So in the school we still believe it necessary to have heavy desks and chairs fastened to the floor. All these things are based upon the idea that the child should grow in immobility, and upon the strange prejudice that, in order to execute any educational movement, we must maintain a special position of the body.

HYGIENE AND TUBERCULOSIS.

The health authorities of New York City are undertaking an almost superhuman task in attempting to check the ravages of pulmonary tuberculosis. Without going into the details of the plan presented as a part of their health exhibit, excerpts from one of the Monograph Series (No. I, February, 1912), published by the department of health, and reprinted in the appendix to this paper (p. 40), will give some idea of the extent of the educational work of the department in teaching the people how to prevent infection and how to undertake to effect a cure when infected. These directions are worth the careful consideration of teachers, health authorities, and all others who are striving to conquer the "Great White Plague."

The value of pure air.—In all the exhibits relating to the newer and better school buildings of the country, a noticeable improvement was evident in methods of construction and equipment with reference to ventilation. All large city school buildings recently constructed are equipped with the plenum system of ventilation. This means that fresh air is forced into these buildings by a fan system so installed and so regulated as to furnish to each child a sufficient supply of pure air. Because many plenum and other systems of ventilation have been erroneously installed and poorly operated in modern school buildings in the past few years, some school men have hastily concluded that we are proceeding on the wrong method, and have condemned without due consideration.

The chief cause for this complaint is the attempt to furnish sufficient air with a fan or fans too small to do the work expected of them. It is false economy to install fans requiring a maximum speed to furnish the quantity of air required. The ducts to carry the air

to and from the schoolrooms should be ample to insure sufficient movement of the air to keep all parts of each room well ventilated. It was interesting to note in the large exhibits of up-to-date manufacturing establishments that inadequacy in these respects was generally avoided, for it has been learned that economy in operation is always conserved by the use of machinery whose maximum power is always far beyond the ordinary requirements. Where many people work, for many consecutive hours during cold weather, in tight, well-constructed buildings, no other system of ventilation has been devised which gives as good results as the plenum system, aided by an exhaust fan or some other method of artificially creating a draft in the outlet ducts. In practically all of the manufacturing industries where pure air for the workers means better work and a larger output, the ventilation furnished is more nearly adequate to the needs of good health than in our best schools. False economy in factories shows in dollars and cents; in schools the direct economic bearing of bad air is not so readily seen, but the bills are finally paid in health and life.

Open-air schools and open-air sleeping rooms.—The movement for open-air schools is directly traceable to the recuperative effect of outdoor air on sick children and adults. It was to be expected, therefore, that the exhibits of hospitals and sanitariums, especially those designed for the care of tuberculous patients, would show the greatest progress in this direction, and that schools for defective and anemic children should show more provision for outdoor classrooms than schools for normal and healthy children. But the fact that the effect of preaching the gospel of fresh air and of the out-of-doors was shown in all such buildings is a very hopeful sign. Moreover, the movement is spreading to the homes, the shops, and especially to those industrial and financial organizations which count the health and welfare of their workmen as a financial asset. It marked a new era in educational hygiene when insurance companies found that it would be profitable for them to teach their policy holders not only to keep themselves well and thus prolong their lives, but also to keep their families well and happy, and thus indirectly to make the payment of premiums more regular and certain. In one of the beautifully printed booklets exhibited by a manufacturing establishment, photographic illustrations were shown of methods of constructing outdoor sleeping rooms, and were accompanied by such legends as these:

Plenty of good fresh air will make the fires of life and health burn brighter; therefore do not hibernate—ventilate.

If you can't work outdoors, sleep outdoors.

The only night air that is injurious is last night's.

A life insurance company showed a model of its sanitarium where consumptives are treated. In connection with this model placards were exhibited saying:

When a consumptive can not be sent to a sanitarium, arrangements for taking the cure at home should be made as soon as the disease is discovered.

Sleep with your windows open. Do not be afraid of night air. Do not be afraid of cold air.

Do not live in a room where there is no fresh air. Do not work in a room where there is no fresh air. Do not sleep in a room where there is no fresh air.

Consumption is a preventable disease; it is a curable disease.

Sunlight and fresh air kill tuberculosis germs.

This sanitarium was constructed for the cure of clerks and those who have developed tuberculosis while in the service of the company. There are 415 acres included in the sanitarium grounds. The buildings are fireproof throughout, and are designed to accommodate 200 patients. It is planned to have also an extensive garden in connection with it, where fresh farm products can be utilized for food, and where helpful outdoor work for the patients may be obtained. It is needless to say that in the buildings open-air sleeping rooms and opportunities for open-air exercise and recreation have received paramount attention.

The same company, in connection with its exhibits, distributed an illustrated pamphlet with the title, *Directions for living and sleeping in the open air*. On the bottom of the outside cover, it was stated that this was "issued for the use of policy holders." This pamphlet was prepared for the company by Dr. Thomas S. Carrington, assistant secretary of the National Association for the Study and Prevention of Tuberculosis. It is an educational document, pure and simple, written by an eminent specialist and illustrated in such a way as to help anyone in the construction and equipment of open-air sleeping rooms. It is barely possible that this company had in mind to do a general social service by the publication of this pamphlet; but it is practically certain that it would not have been printed had they not realized that it would serve to teach their policy holders and all others who read it that sleeping in the open air will insure better health and longer lives and in the end prove a good investment for all concerned. Such educational work pays, and business corporations are not slow to take advantage of the commercial aspects of good health. This kind of "enlightened selfishness" is a sort to which no worker can object, for it helps both capital and labor and harms neither. It approximates a phase of practical ethics which suggests a basis for a larger common understanding.

This same company has established a visiting nurse service for its sick industrial policy holders. While of course such service is

expected to aid directly in helping to save the lives of these policy holders, the real aim and purpose of this service is educational. The significant remark made about the value of the nurse in the printed matter is this:

> It is sufficient for the purpose of the company to realize that the work of a nurse is part of an educational propaganda, and that in the long run her services must redound to the general benefit and welfare of the policy holders. There can be little doubt, however, that in time strong evidence will be forthcoming of a considerable improvement in the mortality of policy holders. * * * As a matter of interest, it may be noted that at the end of June, 1912, the nursing service experiment was being conducted in approximately 1,104 cities and towns in the United States and Canada, and for the year 1912 it is conservatively estimated that a total of 1,000,000 visits will be made to policy holders of the company at a total cost of $500,000.

It would be a dull mind indeed which could not see that such activity as this, duplicated in its general purposes and work by numerous other business concerns, represents a new phase of educational service to the whole nation. It matters not who does the teaching so long as it is done effectively and purposefully.

In the exhibit of Cleveland, Ohio, showing the "Cooley Farms," there was a plaster cast model of a 500-acre farm for a tuberculosis sanitarium to cost $500,000, as well as of a colony farm of 500 acres for an infirmary or almshouse. In the exhibit a placard stated that 2,000 acres of land furnished opportunity for 8,000 prisoners to work in the open fields, without lock or bar. "The open sky is better than the dark cell." These facts remind us again that we are giving relatively more attention to those who have gone wrong than we are giving to to those who have not yet gone wrong, and will not go wrong if they have the opportunity of decent treatment and decent development. It seems unfortunate that our minds, even in exhibitions on hygiene, have been concentrated on cure instead of on prevention. Still, the fact that authorities are realizing that the open air and the sky and employment will reconstruct body and soul of both the sick and the criminal has for us the lesson so often taught of late, that fresh air, sunshine, and congenial wholesome employment offer the biggest developmental opportunity any man needs.

In order to see how the cities in the northeastern section of the country are undertaking to meet the difficult health situations brought about by the great influx of population from foreign countries and congestion of the population, one only needed to read a card posted by the Rochester (N. Y.) Public Health Association, showing the age, sex, nationality, and diagnosis of the children who were gathered in their open-air schools which were started July 4, 1912. The chart here follows.

Open-air school, Rochester, N. Y.

Age.	Sex.	Nationality.	Diagnosis.
5	Female.	Italian.	Tuberculosis.
9	Do.	German.	Do.
12	Male.	Do.	Do.
10	Female.	Italian.	Do.
9	Do.	Hebrew.	Do.
12	Do.	Italian.	Do.
9	Male.	Do.	Do.
6	Do.	American.	Do.
16	Do.	Irish.	Do.
8	Do.	American.	Do.
16	Do.	Italian.	Do.
6	Female.	Hebrew.	Do.
13	Do.	Italian.	Do.
9	Do.	Hebrew.	Do.
7	Do.	Do.	Do.
8	Do.	American.	Do.
9	Male.	Irish.	Do.
6	Female.	English.	Do.
11	Do.	Hebrew.	Do.
12	Male.	American.	Do.
10	Female.	German.	Do.
9	Do.	Hebrew.	Do.
5	Do.	Irish.	Do.
8	Do.	Italian.	Do.
12	Do.	Do.	Do.
8	Male.	Hebrew.	Do.
8	Do.	Irish.	Do.

Boy Scouts.—The exhibit of the Boy Scouts consisted chiefly of photographs of boys on the trail, in camp, fishing, signaling, drilling, and the general opportunities they have in their "hikes" for coming in contact with nature and trying to make themselves comfortable and happy under various conditions. Other photographs show them exercising, swimming, boating, and at lectures on "first aid;" studying trees, and in general trying to adapt themselves to nature and make the most of situations away from the hurry of the crowd. The great expansion of this movement in the last few years has been one of the wonders of organization. Whether or not this will degenerate into a sort of semipreparation for war, one can not say, but at present it is doing enormous good in taking boys out of the cities and giving them a breath of fresh air, and bringing them in contact with nature in its various moods and conditions. Without such an organization as this, many boys would never get the opportunity thus given for journeys into the country to test their own strength and develop their own powess.

Tom Sawyer was a philosopher, and knew how to get other boys to do his work if only in some way he could get those boys to imagine that it was play and not work.

The Kansas Boy Scouts have organized an antifly campaign under the guise of uniform and military tactics and the other little folderol of organization. Wise heads have directed their energy and strength to cleaning up back yards, dirty streets, and setting an example before older people of cleanliness and all that is associated with it.

INDUSTRIAL HYGIENE.

Without doubt one of the most encouraging signs of progress in hygienic living was that shown by the rapid development of methods of protecting workmen from what are known as occupational diseases. Knowledge of the laws of health and of the economic value of health is slowly but surely revolutionizing the attitude of manufacturers toward their employees. Due to the fact that good health is now being valued as an economical asset, not only by the workman but also by the employer of labor, it is no longer a mere matter of humanitarian sympathy to furnish fresh, clean air, good light, and safe environment to workmen; it also pays. Perhaps no phase of hygienic science received, on the whole, so much attention in the exhibition as this. At first glance it may seem to indicate low ethical standards of our people to find that better health conditions are often contingent on mere economic considerations. But on closer analysis, one is inclined to believe that this is in the direction of a higher form of ethics. The fundamental principle everywhere exhibited in society, which demands returns comparable to the science and skill involved in the labor, is finding a new exemplification in the economic value of good health and congenial environment.

It is one-sided ethics to give without the expectation of some form of return. True, the highest form of return in many undertakings is not measureable by economic standards; but business life must be so measured, else it could not be maintained or developed. Where the demands of the workman for wholesome conditions are seen to be not only consistent with his own welfare and happiness but likewise compatible with the economic success of employers, then a higher and safer plane has been reached and the dangers of dissatisfaction and misunderstandings lessened.

Laundry workers are now relieved from excessive steam and humidity in the workrooms. This is done by the plenum and exhaust-fan system, which not only furnishes fresh air but removes the steam and undue humidity from the air. The exhibition on the cotton industry showed wonderful progress in the way of removing lint from the air and in humidifying and ventilating. In the best woolen mills, where workers are exposed to infection and the inhalation of shreds of fiber, the lighting and ventilation and cleanliness are being looked after with great care. There was also a great mass of photographs showing factories with ideal sanitary conditions, and some showing bad conditions and ineffective apparatus.

One of the striking features of modern factory life is the rapid development of life-saving through better ventilation. In all phases of manufacturing where dust and bits of metal or glass are likely to be scattered through the air, and thereby injure the health

of the workmen, the fan system of furnishing fresh air and exhausting the dust is bringing much relief. This method was shown in the manufacture of cut glass and photo-engraving by fan systems for exhausting the fumes and other deleterious substances released by chemical or other processes. The composing rooms of newspapers, whether in the basement or in the attic, are now ventilated and purified, not only as a means of saving the lives of the workmen, but from an economical point of view; it has been found that workmen will do better work and more work under these conditions than under insanitary conditions of the air. Even in those manufacturing establishments where comparatively little dust is released, but where many people are at work, the air is purified in winter by means of forced ventilation, and in summer large windows furnish abundant fresh air.

The industrial diseases reported to the State department of labor for the first nine months of 1911, under New York reporting laws, show a total of 146 cases, lead poison leading all others, with caisson disease second.

The best department stores throughout the country are seriously engaged in furnishing to their salesmen and women good air, rest rooms, sanitary toilets, ventilated locker rooms, sanitary drinking fountains, emergency hospitals for women; and instruments have been designed for analyzing air in various workshops and mercantile establishments. Rogers's apparatus for determining carbonic acid (CO_2) was on exhibition in connection with the display of mercantile and manufacturing establishments.

A large and well-known manufacturing company exhibited its care for the health of its employees by illustrated lectures on digestion, personal hygiene, circulation, respiration, effects of narcotics, housing conditions, tuberculosis, venereal diseases, and campaigns against the fly. It attempts to improve its shop conditions by special cleanliness, systematic disinfection, and perfect ventilation. It furnishes baths for all its employees, and maintains a sanitary barber shop. Clean aprons and sleevelets are provided, also individual towels, combs, and brushes, the latter being sterilized daily. It employs a factory physician who makes a physical examination of all employees; an oculist who looks after the eyes of the workmen; trained nurses to care for the sick and advise those who are in need of their services. It provides an emergency hospital and ambulances. It has organized relief associations, and changes the occupations of the workmen in order to help them maintain their health.

One cabinet of this exhibit was devoted to the importance of air and light. Prominent among the placards in this cabinet were the following:

Don't sleep where there is no fresh air; don't work where there is no fresh air; don't live where there is no fresh air.

The trouble is that people do not allow enough fresh air and enough sunlight into their rooms.

Consumption causes more deaths than any other disease. Nearly one-third of all the people that die between 20 and 45 years of age die of consumption.

Consumption is caused by the dust from dry spit. Don't spit on stairs. Don't spit on sidewalks.

The germs of tuberculosis enter the living body through the lungs and mouth by breathing; also by infected food.

The only consumptive to be afraid of is the careless consumptive. He coughs and spits anywhere and everywhere; he is a danger to the neighborhood.

Alcoholic drinks are particularly bad for persons suffering from consumption. They don't cure, they kill.

A large number of beautifully colored photographs of interiors of workrooms and machine shops, showing abundance of good light, were exhibited. The grounds about the buildings are kept clean and are beautified with vines and flowers. One placard stated that four-fifths of the buildings are glass, thus giving ample opportunity for sunshine and fresh air. Air, light, water, food, and exercise are mentioned as the essentials of hygiene in connection with its industry. Fresh air is furnished by means of forced ventilation, taking the air from above the buildings and forcing it into the rooms by means of fans. Foul air is also drawn out through the wall by ventilators and exhaust fans. All air in the buildings is changed every 15 minutes. The buildings are removed from other buildings, so that there is air space between them all, and to prevent contamination of the air 160 acres of park land separate the buildings from other structures. Light is furnished through windows aggregating four-fifths of the wall space of all the buildings. The buildings are painted a soft color, so that the glare will not weary the eyes.

Sanitary drinking cups, sanitary drinking fountains, and distilled and aerated water are used, and no ice comes in contact with the drinking water. In the food department there are sanitary kitchens, a cold-storage plant, and specially trained waiters who are required to take every precaution to prevent contamination of foods. To furnish proper exercise there are gymnasiums, a country club, horse riding, baseball diamond, tennis courts, golf clubs, a cross-country walking club, and ample playgrounds. For women, morning and afternoon recesses.

Truly, such a program as this reads as if it were made for a special school of sanitary living, and in reality it is such. But primarily it was developed as a business proposition. The company has found that good health among its workers is one of its most valuable

assets, and that every precaution it can take to guard them from accident or disease is money well spent. It has also discovered that recreation and fun constitute a vital part of a man's needs, and that it pays for a manufacturer to make provision for this phase of the life of workers.

NOURISHMENT OF CHILDREN.

American custom has not yet sanctioned many health measures by the city and State that more paternal Governments have long put into effect. Most suggestions for direct supervision of the nourishment of school children in this country are generally frowned upon by educators and the public alike. At the same time, it is safe to say that American teachers have not begun to do as much in an advisory way toward solving the problem of malnutrition as they can do. Some of the points upon which the teacher can give very definite instruction were shown interestingly in the exhibit.

First of all, in a great number of the exhibits, emphasis was placed on the necessity for proper infant feeding. After the child becomes of school age, the teacher becomes in a sense the most important supervisor of the health of the children. The ill effects of insufficient or improper nourishment, which may not always show when the child is at play in the house or out of doors, are revealed directly to the teacher during the school session. Inattention, apparent dullness, and all the various irregularities that come from lack of nutrition reveal themselves to the practiced teacher.

The importance of the cleanliness of purchased products was also strikingly emphasized. If a child can be taught to understand the risk of unclean markets, he will impart this information to the parents. This is particularly important in the case of large cities having an alien population. As an example of what may be done in teaching the significance of cleanliness in the sale of groceries and similar goods, an exhibit by the market committee of the Women's Municipal League of Boston may be taken. On one side of an aisle was a model of a small city grocery and vegetable stand of the undesirable sort. The potatoes, cabbages, turnips, and onions all mingled together in dirty boxes, with a not-too-clean fox terrier standing guard over them; a rough-board table with a pile of nondescript bread, cakes, crackers, and rolls, flanked by more vegetables, and some canned goods in decidedly unattractive cans, with a cat, that notorious carrier of germs, seated in the midst. Flies were omnipresent, and the proprietor's coat was ready to be thrown over this food supply in case of rain.

On the other side was a clean market, amply protected from dust and flies. The bread was wrapped in sealed wrappers; the cakes and

rolls were under glass covers; the groceries were all kept separate and distinct in glass compartments; and the whole environment clean and inviting, with little added expense.

The whole purpose of this exhibit was to show those who ought to know the importance of the scrupulous care of food products for household consumption. The successful accomplishment of this represents one of the first and most needed steps in providing proper food for children.

The Women's Municipal League of Boston also exhibited a model of a play grocery shop of the better type, which is carried from one social settlement house to another. The children play in it, and through it are taught the value of orderliness and cleanliness. This shop as shown was inexpensive to equip, and for the few dollars outlay necessary almost any community could demonstrate to its children, and through them teach the parents and dealers themselves, the ease with which cleanliness can be obtained.

In this same connection the New York association for improving the condition of the poor demonstrated in an interesting fashion what can be done in providing wholesome and economical meals for school children. Six prepared meals were shown in models. The first three represented what the school child was fed by the parents before they had instruction in food values. The second three showed the meals provided by the parents after they knew what to give their children. If every teacher could see these two varieties and could impress in this objective way the children or their parents with the importance of the difference between the two, there would be fewer ill-nourished and underfed school children to dawdle away their time because of insufficient energy at command.

The following are the menus:

Before instruction.

Breakfast: Coffee with milk and sugar, cruller, and sugared bun.

Lunch: Coffee with milk and sugar, bread and butter, cruller, and slice of ham.

Dinner: Coffee with milk and sugar, bread and butter, bologna, pickle, piece of pie, and dish of sliced bananas.

After instruction.

Breakfast: Chocolate, bowl of cereal, pitcher of milk, whole-wheat bread, dish of prunes.

Lunch: Glass of milk, bowl of soup, bread and butter, homemade cookies.

Dinner: Lamb chop, bread and butter, spinach with egg, boiled potato, dish of bananas.

In connection with this exhibit, pictures were shown of actual scenes wherein the New York association is teaching 50,000 little mothers how to cook and manage other household duties. Photographs of children properly nourished and of those improperly nourished were displayed.

In many departments of the exhibition a great many charts and illustrative materials showing the value of the proper feeding of infants were exhibited. The difference between the natural milk for the baby and other forms of food was very strikingly illustrated. One chart from the Department of Agriculture, Bureau of Chemistry, showing the composition of foods for infants, made it very clear that no prepared food even approximated the natural breast food in its composition and proportion; cow's milk and goat's milk are far more nearly like natural human milk than any of the prepared foods on the market. Other charts showed food formulas for children of various ages. These exhibits gave a striking illustration of how modern science, worked out patiently in the laboratory, can be and is made of the utmost value in a practical way. Not only has it brought to our attention the great importance of proper diet, but it has put into the hands of the people information through the use of which they can combat nearly all sorts of disease. Those prepared foods, skillfully advertised, making claims of being more useful even than the natural diet of the child, were here shown to be faulty.

The plain lesson taught by all these charts is that the natural life is the sanitary life, and a mother who can not or will not nourish her children in the natural way has at once limited the possibilities of the child not only as to its health but also as to his natural growth and to his general future development.

MENTAL HYGIENE.

The exhibit on mental hygiene was installed through the cooperation of the National Committee for Mental Hygiene (50 Union Square, New York City), the Connecticut Society for Mental Hygiene, the Illinois Society for Mental Hygiene, and the Committee on Mental Hygiene of the New York State Charities Aid Association. The material presented was arranged in six sections. Sections A and B were designed to show the—

incidence of insanity and mental defectiveness in the United States and its significance; some explanation of the apparent increase in insanity; the cost of caring for the insane and the mentally defective; the relation of immigration to the incidence of insanity and mental defectiveness; and the effects upon the community of the uncared-for insane and mentally defective.

Some of the statistics set forth in connection with this section are rather startling. For example, it was stated that on the 1st of January, 1910, there were 187,454 insane persons in institutions in the United States. This number exceeds the number of students who were enrolled in all colleges and universities in this country at that date.

The number of patients in institutions for the insane is increasing at the rate of 6,000 per year. About 30,000 new cases enter our public and private hospitals for the insane each year, and this number must be far below the number that deserve treatment.

The apparent increase in insanity in this country was partly accounted for by the presentation of the following facts:

The average expectation of life is longer by 10 years than it was a century ago, and since insanity is more often found in the middle or later periods of life, there would be, other things equal, relatively more people so afflicted; better standards of care cause more people to seek institutions for relief in the early stages of the disease; conditions now recognized as mental diseases were passed over previously, and those so afflicted were often classed merely as criminals; the death rate in institutions is lower now, hence the number increases. But it can not be denied that of all of the classes of sick people cared for in hospitals the insane is by far the most numerous. The number of beds provided for the insane is in excess of the combined number of beds provided in all other hospitals in the United States.

The estimated cost of caring for the insane in institutions in the United States for the year 1910 was placed at $32,804,500, and was stated to be about equal to the amount expended yearly in the construction of the Panama Canal. The annual economic loss to the country as a result of this withdrawal of labor was estimated at $130,000,000. The burden of caring for the insane was strikingly illustrated by figures showing, for example, that in New York State nearly one-fourth (23 per cent) of the entire annual expenditure of State funds was appropriated last year for the care of the insane. Only a little more (24 per cent) was spent for the support of common schools and the educational department.

The general conclusions relating to the effect of immigration on the prevalence of insanity were stated as follows:

That immigration is an important source of insanity in the United States is shown by the fact that although the foreign born constitute but 14.3 per cent of the general population, the foreign-born insane constitute nearly 30 per cent of the insane in institutions, and this, too, despite the fact that all ages are not represented in the foreign-born population, as in the case of the native born. The wise and humane control of immigration with reference to the exclusion of the insane and mentally defective is a pressing need.

In a chart entitled "The children of mentally defective women" it was stated that—

The British Royal Commission reports that the offspring of mentally defective women are twice as numerous as the offspring of normal women.

A helpless, feeble-minded woman is the prey of not one man but of many men. In the foregoing series 20 women bore 60 children by 38 fathers. Practically all such women became mothers soon after reaching the age of puberty, and most of the children of such women are mentally defective or illegitimate, or both. Of the above 60 children 19 were mentally defective and 28 illegitimate.

The unfortunate birth of such children, their helplessness, their pauperism and consequent ruin, are but part of a continuous series whereby the community is constantly supplied with the elements of degeneracy and crime.

Another chart:

The effect of the mentally defective upon a community: Insane father, feeble-minded mother; 7 children, all mentally deficient; 1 under institutional care, 1 married, 3 at almshouse with mother.

Alcoholic father with imbecile brother; alcoholic mother, tuberculous sister; 8 feeble-minded children, only 1 under institutional care.

Feeble-minded paternal grandmother, neurotic paternal grandfather, alcoholic father, neurotic mother with "queer" sister; 10 children—8 feeble-minded, 2 uncertain; 1 only under institutional care.

The institution at Vineland, N. J., has a record of 237 similar families. Draw your own conclusions as to the effect of such families upon society and community life. It is known that 25 per cent of all criminals are mentally defective.

In sections C and D material illustrating the different types of the nervous system, from the lower animals to that of man, was exhibited. The purpose of this section was to show the "different levels at which the personality is vulnerable, and to illustrate by the life histories of actual cases of mental disease, and to indicate the way in which adjustment can be interfered with by damage to its mechanism." This last point was illustrated by photographs of the brain and nervous system in various diseased conditions.

In this section emphasis was placed on the fact that the fatalistic attitude of the public toward insanity is not justifiable, for many of the causes are avoidable either by special measures or by strict compliance with the laws of general hygiene. The person who has not made some study of insanity, or who has not been informed by those who have made such a study, is inclined to look upon all insane people as if each were afflicted in the same way. There are, however, many varieties of insanity or insanities, each with its characteristic cause and varying in hopefulness or hopelessness accordingly. The statistics presented showed that about 25 per cent of all who are committed to insane hospitals recover and remain well. About the same number, while not completely cured, are able to return to their homes and take some part in active life.

Section E was devoted to the methods and the results of institutional care of the insane and the mentally defective. The crude and horrible methods formerly used to restrain insane people were exhibited and contrasted with the freedom and lack of restraint to-day. An insane person is now treated as a sick person, and not as one possessed of a devil, as was formerly the case. It was stated that—

The Boston Psychopathic Hospital and the Henry Phipps Psychiatric Clinic of Johns Hopkins University are institutions which represent the most humane idea in the care of mental diseases. Institutions of this character break down the last barrier between the treatment of the insane and the treatment of other classes of the sick.

Section F was devoted to the campaign for mental hygiene in general. The recommendation was made by the national committee for mental hygiene that practical aid in mental hygiene should be given by the universities throughout the country by—

(*a*) The establishment in all universities of departments for the study of the structure and function of the nervous system in the lower animals, so that the investigator may go from the simpler to the more complex phenomena of behavior.

(*b*) The study of human psychology on a far broader basis than has yet been attempted.

(*c*) The establishment of departments of mental hygiene, so the natural capacity and trends of students may be determined in order that their mental health may be protected and their efficiency and chances for success increased by helping them to find the place in the world for which they are best adapted.

The committee further recommended that—

1. More attention should be given to the subject of mental diseases in medical schools, in order that the general practitioners may recognize cases of mental disease early and aid in securing treatment for them.

2. Institutions where early cases of insanity or those in danger of developing mental diseases may secure treatment, such as psychopathic hospitals and special wards or pavilions for the insane in connection with general hospitals, should be established in many cities.

3. Improvement of the standards of nursing the insane should be sought by providing opportunities for training nurses and attendants, together with shorter hours, better wages, and better living conditions for these workers.

4. Alcohol and syphilis, as preventable causes of mental disorders, should be attacked vigorously.

5. The relation of heredity to insanity should be carefully studied.

6. The feeble-minded should be segregated in suitable institutions, so that the jails, almshouses, and hospitals for the insane may be relieved of cases not subject to reform or cure, and that the feeble-minded may be delivered from such unsuitable institutions.

7. Backward children in the public schools should be given a careful mental examination by competent examiners, and so should all juvenile delinquents, in order that these classes of children may be given the right kind of work to do and, if possible, be placed in an environment conducive to their greatest usefulness.

8. The relation of crime to insanity should be studied carefully, so that the legal aspects of the problem may be made to conform more closely to its medical aspects.

An outline of the work of the National Committee for Mental Hygiene was set forth on a chart, as follows:

The National Committee for Mental Hygiene aims to serve as a clearing house for the Nation on the subject of mental health, the prevention of nervous and mental disorders, the care and cure of the insane; and aims also to serve as a coordinating agency for all State and local agencies interested in these problems.

Its activities are as follows:

1. The National Committee for Mental Hygiene is gathering reliable data on mental health, the causes and prevention of nervous and mental disorders, and the care and treatment of the insane, and will publish and keep before the public vital facts regarding these subjects.

2. The National Committee for Mental Hygiene is gathering interesting material for exhibits and lectures on mental hygiene and the care and treatment of the insane, so that interested workers in the several States may show the necessity for concerted action in behalf of the insane and the numerous portion of the public which is in danger of developing mental disorder.

3. The National Committee for Mental Hygiene is enlisting the interest and support of the public, so that all States will grant adequate appropriations for the care of the insane and for the proper management of the problem of mental health in their respective communities.

4. The National Committee for Mental Hygiene is enlisting the support of philanthropists who heretofore, because of the absence of a coordinating agency in this field of endeavor, have found it difficult to help the insane. This will hasten the day when psychopathic hospitals, psychiatric clinics in connection with medical schools, and special wards for the treatment of mental diseases in general hospitals will be established throughout the country and make it possible to treat all cases of incipient mental disorders promptly and with full effect.

5. The National Committee for Mental Hygiene has published a document entitled "Summaries of the laws relating to the commitment and care of the insane in the United States," with a view to securing uniformly good laws in all States, and further as a means of raising the standard of care for the insane throughout the country, it being an accepted fact that States with highly developed systems of care and treatment of the insane also have the best and most complete laws on the subject.

6. The National Committee for Mental Hygiene is studying conditions among the insane in the United States, under the terms of a special gift of $50,000, for the purpose of ameliorating their condition. In order to achieve this result, plans for improvement, for the use of interested workers in given States who desire disinterested advice regarding their local problems, will be furnished upon application.

7. The National Committee for Mental Hygiene will help to organize State societies for mental hygiene and local committees for mental hygiene throughout the country, so that local conditions may be improved in given States by representative groups of people who are vitally interested in the work and best qualified to manage it.

8. The National Committee for Mental Hygiene is studying the extent and character of the instruction given in medical schools in the United States regarding mental diseases, with a view to having such instruction conform to the importance of this subject, so that physicians generally may be able to recognize cases of incipient mental disorder.

9. The National Committee for Mental Hygiene is studying the relation of immigration to the prevalence of mental diseases and defects, with a view to rendering aid in devising wise and humane methods in controlling the immigration of the insane and mentally defective.

The chief objects, as stated and set forth in a placard, are summarized as follows:

To work for the protection of the mental health of the public; to help raise the standard of care for those threatened with mental disorder or actually ill; to promote the study of mental disorders in all their forms and relations, and to disseminate knowledge concerning their causes, treatment, and prevention. To obtain from every source reliable data regarding conditions and methods of dealing with mental disorders; to enlist the aid of the Federal Government, so far as it may seem desirable; to coordinate existing agencies and help organize in each State in the Union an allied but independent society for mental hygiene, similar to the existing Connecticut Society for Mental Hygiene.

The committee on mental hygiene of the New York State Charities Aid Association offered an interesting exhibition by charts and maps illustrating their method of prevention.

The importance of mental hygiene was emphasized in a series of charts setting forth, among other statements, the following:

Mental hygiene is the study of individuals with a view to determining their natural capacity and trends, then of assisting them first to find, and then to retain, a place in the world for which they are adapted.

A nation's greatness depends upon the efficiency of its citizens; personal efficiency depends upon a healthy brain and nervous system and the organization of sound habits.

Our conduct and thoughts depend upon the capacity of our nervous system. The brain is the individual—by it man lives, moves, and has his being. Education is a process of training the brain and nervous system by study and discipline. The aim of education should be to develop the capacity of these organs to the utmost.

If a training in pedagogics gave teachers a clearer and more practical insight into actual life, as well as some appreciation of the beginning pathological tendencies of humanity, many failures would be avoided and many difficulties would be overcome.

—KRAFFT-EBING.

In the section on the prevention of insanity and mental defectives the Minnesota School for Feeble-Minded and Colony for Epileptics, at Faribault, had an interesting exhibit. A large map was exhibited showing the location of the village community and colonies, consisting of training school, custodial department for women, hospitals, kitchens, colonies for boys, etc. Along with this were numerous photographs of the buildings, grounds, the workshops, library, schools, gymnasiums, recreation halls, etc., showing how much care is being bestowed upon the unfortunates. Here on a farm of 1,038 acres defectives and epileptics are really given a better opportunity for normal living than is very often given to the healthful and more fortunate children of our Nation. From their school work a rather unique exhibit was shown. One of these illustrated the relation of mental age to ability in sewing. For example the work of the normal child of 4 years is taken as a basis, and that of all the defective girls who showed about the same amount of skill and talent, regardless of years, was classified with this. For example, the sewing of a girl of 19 was of such a nature as to make it plain that it is impossible for her to do better handwork than a normal child of 4 years. This line of illustration is used up to the mental age of 8. It is a rather new suggestion and offers opportunity, it seems to me, for a new, even if crude, form of mental measurement. Naturally here, as in all instances where the measurement of the intelligence is undertaken, great care and scientific carefulness must be observed.

In a pamphlet distributed in connection with their exhibit the committee on mental hygiene of the New York Charities' Aid Association sought to answer in a brief way this question: Why should any-

one go insane? Some parts of the answer to this question are here reproduced and deserve careful consideration by all people:

CAUSES OF INSANITY.

1. *Immoral living.*—One kind of insanity is known popularly as "softening of the brain." It is known scientifically as general paralysis, or paresis. It is incurable by any means now known to the medical profession. * * * The very substance of the brain becomes changed. They usually live but a few years. It is now agreed by the medical profession that this disease is caused by an earlier disease known as syphilis. * * * If self-respect, the desire for the good opinion of others, the influence of religious training, and the attractions of home life are not sufficient to prevent this kind of wrong doing, the danger of contracting a disease which may result in incurable insanity should be sufficient.

The number of patients having paresis or "softening of the brain" admitted to State hospitals during the year ending September 30, 1910, was 600 men, or 17 per cent of all men admitted, and 263 women, 8 per cent of all women admitted.

2. *Alcohol and other poisons.*—Another group of mental diseases are due directly to the habitual use of alcohol. Alcoholic insanity may be brought on by the regular use of alcohol, even in "moderate" quantities not producing intoxication. The close relation between alcohol and insanity has only recently been fully realized. * * * Fully 30 per cent of the men and 10 per cent of the women admitted to the State hospitals are suffering from conditions due directly or indirectly to alcohol. So marked is the effect of alcohol upon the brain and the nerve tissue that it helps to bring about a number of mental breakdowns in addition to the alcoholic insanities.

* * * * * * *

In this day of keen competition every man needs the highest possible development of his mental capacities. Not only is the highest mental development impossible in the presence of the continued use of alcohol, but impairment of the mental faculties is likely to follow. The children of those addicted to alcohol often start in life with morbid tendencies or mental defects.

Other poisons, such as opium, morphine, and cocaine, which, with alcohol, are the principal parts of many patent remedies, often weaken the mental powers and produce insanity.

3. *Physical diseases.*—Some mental breakdowns may be traced to the effects of other physical diseases. Typhoid fever, influenza, diphtheria, and some other diseases often so poison the system that, for some time after the disease itself has left, the regular functions of the body are seriously interfered with.

* * * * * * *

Overwork is often spoken of as a cause of insanity. This is not correct. Hard work alone rarely causes a nervous breakdown. It only becomes a menace to health when associated with worry and loss of sleep or causes mentioned under other headings.

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4. *Mental habits.*—Aside from physical causes there are also mental causes. They are the most important causes of some forms of insanity. The healthy state of mind is one of satisfaction with life. This does not depend so much upon our surroundings or how much money we have or how many troubles come to us, as upon the way in which we train ourselves to deal with difficulties and troubles. * * * Mental health is as important as physical health. The average person little realizes the danger of brooding over slights, injuries, disappointments, or misfortunes, or of lack of frankness, or of an unnatural attitude toward his fellow men, shown by unusual sensitiveness or marked suspicion. Yet all these unwholesome and painful trains of thought may, if persisted in and unrelieved by healthy interests and activities, tend toward insanity.

Wholesome work, relieved by periods of rest and simple pleasures, and an interest in the affairs of others are important preventives of unwholesome ways of thinking. * * *

Our remedies oft in ourselves do lie,
Which we ascribe to heaven.
—SHAKESPEARE.

Heredity.—Most persons think that insanity may be directly inherited. This belief is undoubtedly wrong. One may inherit a greater or less tendency toward insanity. Mental instability may be inherited just as weak constitutions may be inherited. * * * The most important fact in heredity is that the vast majority of ancestors of every individual were normal. Heredity tends, therefore, rather more strongly toward health than toward disease.

The fact that heredity plays a part in the causation of insanity should create a public conscience regarding marriage. Marriages should not be contracted by two persons who have insanity or feeble-mindedness in their immediate families without seeking and following the advice of a competent physician.

SEX HYGIENE.

The exhibit which attracted by far more attention than any other presented was that illustrating the effects of venereal diseases and the work and propaganda of the American Society of Sanitary and Moral Prophylaxis. The section on sex hygiene, while described by one speaker as "the hall of horrors," will probably have a more definite and far-reaching educational effect than any other part of the exhibit. In addition to an extensive display of wax models, drawings, charts, and photographs, a dark room in which lectures, illustrated by lantern slides and moving pictures, were given, was in almost constant use throughout the whole exhibition. The great interest displayed in these lectures and the information disseminated in connection with this exhibit furnished striking evidence that at last the awful curse of these diseases is emerging from its veiled secrecy and that the time is rapidly approaching when the generations unborn will be protected from their baneful results.

In the outlines presented, setting forth the general educational propaganda, emphasis was placed on the possibilities of teaching sex hygiene successfully, and with as few complications as possible. The following is the program suggested:

I. The subject of sex hygiene must be taught as one intimately and obviously related to other subjects in the curriculum, such as natural history, biology, etc. To detach the subject of sex, and teach it to young children as an unrelated course, not only is illogical and unscientific, but gives it undue prominence in the childish mind.

Instruction must be given in the earliest grades as a part of nature work, and should be carried through the entire social period, its complexity increasing with the growing demands of the child. The child should be encouraged to ask questions and make its own observations.

It naturally follows that the teaching should be accompanied by no more sentimentality or vagueness than any other natural history subject.

II. At an early age a systematic attempt should be made to inculcate in the child a great respect for beauty and for the potential possibilities of the human body, the profound importance of habits, both physical and psychological, and the necessity for a clean, well-developed body for efficient manhood and womanhood.

By the time the child attains puberty, he or she should have a clear general knowledge of the plan of reproduction, gained almost wholly from a study of comparative anatomy in an evolutionary form, from the lowest unicellular type to the complex vertebrates. There should also have been gained by this time a good working vocabulary.

III. Up to the age of puberty it would seem best that sex hygiene should be taught by the regular class teacher, if fitted by nature for the work. Through her personal knowledge of the children, she should be able to distinguish the most precocious, and by aid of the medical inspector or, better, the parents, give the special instruction they demand. She should also be able to distinguish those children who, by reason of heredity or environment, form a species of degenerates, one of whom may exert a most demoralizing influence upon the sex education of an entire classroom. This duty would also obviously necessitate very careful training on the part of the teacher. Such training should, therefore, be an essential part of every normal school and university.

IV. Special care should be given to the peculiar nervous and mental phenomena of the period of puberty. The cooperation of the medical inspector is here most important. Parents should be especially warned of the significance and dangers of this most important phase of all life.

At this time a course in citizenship should be inaugurated, and an attempt made to develop an acute sense of the social and race consciousness, with the idea of preparing the child for an understanding of the sociological significance of sex.

V. Throughout adolescence the youth is particularly sensitive to psychical and idealistic appeal. In this season, during high school and boarding school, the study of eugenics and heredity should be introduced, special stress being laid upon the responsibility of the present generation for the next, and upon the rights of the unborn. The relation of sex to all creative art, such as painting, music, and poetry, should also be made clear.

At the same time, the youth, male or female, is old enough now, in the latter half of his high-school course, to assimilate a more technical study of the physiology of reproduction, the dangers of precocity along certain lines, of masturbation, and of the venereal diseases. To both boys and girls should be given a thorough course in the physiology and hygiene of menstruation. All of this advanced instruction would gain authority and dignity if given by well-trained men and women of the medical profession.

VI. In the attempt, however intelligent, to deal with the sex education of children the teacher can not hope to meet with the desired results unless the parents will cooperate with the schools.

To convince the parents of the necessity of such instruction, every means should be taken to arouse them to an appreciation of existing conditions.

To this end, prepared lectures and demonstrations should be given them through the school centers, through parents' associations, and through women's clubs, where prepared literature may also be distributed.

The detailed outlines presented, setting forth a course of work for teaching sex hygiene, were in part as follows:

EARLY ADOLESCENCE (AGE 12–16 YEARS).

I. Nature Study and Biology:
1. Further study of reproduction in plants.
2. Reproduction in the lower forms of animal life.
(*a*) Species in which the care of the young is absent.
(*b*) Those in which love and care of the offspring is evident.
(*c*) Significance of parental love in animal life.
(*d*) The mating of animals and its relation to the care of the young.
(*e*) The higher the animal in scale of life, the greater the helplessness at birth and the more love and care needed.
(*f*) The human body the most helpless of all animals, needing the greatest love and the longest parental protection and care.

II. Adolescent Love:
1. Its influence, if properly directed and controlled, can not fail of good.
2. It should be studied as portrayed in the works of the great literary artists in poetry and the novel.
3. The feeling of chivalry and honor and respect for women is to be zealously cultivated. Biographies of great women and knightly great men should be read by boys and girls.
4. Emphasis must be laid upon the responsibility of brothers and sisters for one another's welfare; also by the boys' obligation to protect other boys' sisters.
5. Expression of adolescent sex love in the form of enthusiasm for art, for altruistic social activities, for favorite intellectual pursuits, are to be encouraged along common-sense lines.

III. Personal Hygiene:
Hygiene and care of the reproductive organs and sex function as sacred obligations.
1. The relation of sex control to the health of the individual and of his or her offspring.
2. The danger of abuse of the sex function, and the results upon the nervous system, including the brain and spinal cord.
3. The importance of properly regulated food, of exercise and play, of physical fatigue (not exhaustion), of mental occupation, of early rising, of cold bathing, of sleeping in a cold room as means of control of sex feelings.
4. The influence of drugs (alcohol, tobacco, opium, cocaine) upon laws of sex control.
5. The significance of sex in human life in the light of plant and animal development as already studied.

IV. Amusements:
1. A careful choice of social pleasures and their environment is essential to moral health.
2. The wholesome meeting of boys and girls is the only safe preliminary basis for mature friendships and marriages.
3. Suggestive shows, posters, and books, also saloons and dance halls, go far toward nullifying the slipshod and careless home efforts.
4. Suggestive posters and pictures make the work of the unhygienic book, theater, saloon, and dance hall very easy.

LATER ADOLESCENCE (AGE 16–25 YEARS).

I. Biology:
1. A further study of the science of reproduction and its application to human life. Human embryology and heredity.
2. Animal breeding and its influence in the production of superior qualities in the animals.

I. Biology—Continued.
   3. Human inheritance and its bearing on family histories.
      (*a*) The inevitable result of the marriage of defectives.
      (*b*) The inevitable result of the marriage of the most fit.
II. Sex Hygiene:
   1. The relation of individual chastity to the moral and physical health of the individual and his or her unborn child.
   2. The social diseases: Their nature, contagiousness, far-reaching effects, and their danger to the innocent.
III. Sociology:
   The ultimate effects of unfair social relations, of the double standard of moral and physical health for the two sexes, of prostitution, and of the diseases consequent upon immorality.

THE METHODS OF TEACHING SEX HYGIENE.

PERIOD OF PARENTHOOD.

Through an intelligent use of the family physician as the natural instructor of the home in sex matters. The feeling of responsibility will ennoble and furnish a new sanity and health to home happiness and morals.

Through sane literature on the subject of sex hygiene, meaning by this term the healthy and reverent use of the sex function with a view to the future welfare of the individual and of his or her posterity.

Through schools yet to be established for the deliberate, intelligent training of parents and school teachers.

Through traveling exhibits, such as are possible through the instrumentality of the State societies of social hygiene or of the American Federation for Sex Hygiene.

Through lectures by physicians and by others fitted by nature and by training to teach.

Through deliberate measures on the part of heretofore negligent municipal and Federal authorities to awaken a slumbering people to the imminence of the danger and the means of prevention and cure.

Through a realization of the fact that the sex function is a sacred trust, not a plaything; a talent for reverent use by loyal citizens, not a means to the undermining of the health and life of the people.

EXPERIMENTAL PSYCHOLOGY.

The Cornell exhibit of experimental psychology.—The Cornell University exhibit in experimental psychology contained a quantity of the newer apparatus that has been developed in this increasingly significant field of knowledge, being especially rich in apparatus for testing intelligence. During the exhibit the Binet test, with certain of the recent modifications, was applied to children, particularly for the purpose of illustrating a class of experiments which it is intended to follow out on a wider scale with the hope that they will ultimately lead to important conclusions.

The relation of sense discrimination to intelligence was one of the subjects in which it was possible to make some experiments of interest. For this purpose there was at hand the following psychological apparatus: The Whipple discrimination-of-brightness apparatus—the ingenious dark-room box that operates by transmitted light; another piece of Whipple apparatus working on the principle of reflected

light; the pressure-pain balance, which ascertains the point where mere pressure becomes pain; the sensory capacity tapping test; the warmth tester, wherein the influence of developed imagination is brought into play; etc. It is believed that ultimately tests based on experiments with this and similar apparatus will show more exact connection than is at present established between sense discrimination and intelligence.

In the Cornell booth there were naturally a number of exhibits of more definite popular interest, yet possessing educational value as measures of intelligence. Notable among these were the various "illusions": The size-weight illusion; the relation of size, form, and distance; and a number of the less familiar line illusions.

APPENDIX.

INSTRUCTIONS RELATING TO TUBERCULOSIS, DISTRIBUTED BY THE DEPARTMENT OF HEALTH, NEW YORK CITY.[1]

How to keep from getting consumption.—Keep as well as possible, for the healthier your body the harder for the germs of tuberculosis to grow therein. To keep healthy, observe the following rules:

Avoid living, studying, or sleeping in rooms where there is no fresh air. Fresh air and sunlight are nature's best disinfectants and kill tubercle bacilli and other germs causing disease; so have as much in your room as possible.

Do not live in dusty air; keep the rooms clean, but do not sweep or dust with dry brooms or cloths. Get rid of dust by cleaning with damp cloths and mops.

Obtain fresh air by keeping one window in your bedroom partly open all night long, and air the room two or three times a day.

Always wash your hands before eating, and do not put your fingers or pencils in your mouth or candy or chewing gum other persons have used.

Take a warm bath with soap at least once a week.

Do not neglect a cold or a cough, but go to a doctor or dispensary.

How to get well if you have consumption.—If you or anyone in your family have tuberculosis, you should obey the following general rules if you wish to get well:

Money spent on patent medicines or advertised consumption cures is wasted. Go to a doctor or dispensary.

Do not drink whiskey or alcohol in any form.

Do not sleep in the same bed with anyone else and, if possible, not in the same room.

Good food, fresh air, and rest are the best medicines for consumption.

Your windows should be kept open winter and summer, day and night.

How to avoid giving consumption to others.—Many grown people and children have pulmonary tuberculosis or consumption without knowing it and can give it to others. Therefore every person, even if healthy, should observe the following rules:

Do not spit on the sidewalks, playgrounds, or on the floor or hallways of your home or school. It spreads disease and is dangerous, indecent, and against the law.

Always spit into a paper cup or into paper napkins or old cloths. These should not be used a second time, but should be at once put into a paper bag, which should later be burned with its contents. Pocket flasks of metal or glass may also be used. If you have no cup or napkin, spit in the gutter. At home use a spittoon half filled with water.

Do not cough or sneeze without holding a handkerchief or your hand over your mouth or nose.

A person who has pulmonary tuberculosis or consumption is not dangerous to those with whom he lives and works if he sleeps alone and is careful and clean.

Rooms which have been occupied by consumptives should be thoroughly cleaned, scrubbed, and whitewashed, painted, or papered before they are again occupied. Carpets, rugs, bedding, etc., from rooms which have been occupied by consumptives, should be disinfected. Such articles, if the department of health be notified, will be sent for, disinfected, and returned to the owner free of charge, or, if he so desires, they will be destroyed.

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[1] See page 18.

When consumptives move, the department of health should be notified.

General advice to those affected.—Be hopeful and cheerful, for your disease can be cured, although it may take some time.

Carefully obey your physician's instructions. You may improve steadily for months, and lose it all by carelessness. Improvement does not mean cure, therefore continue treatment as long as you are directed to do so.

Do not talk to anyone about your disease, except your physician or nurse.

Do not listen to tales of other patients or follow their suggestions or those of others concerning the treatment of your disease.

Report to your doctor or clinic when directed. Report immediately if you have fever, indigestion, diarrhea, constipation, pain, increased cough, or reddish expectoration. If you are too ill to come, send word.

If you have a hemorrhage do not become alarmed; keep quiet and notify your doctor or clinic.

In the treatment of your disease fresh air, good food, and a proper mode of life are more important than medicines. Take no medicine that is not ordered by your physician.

If you are offered admission to a sanatorium, accept at once.

Advise any of your family, friends, or neighbors who have a persistent cough and have no doctor to go to the nearest tuberculosis clinic.

Cough and expectoration.—Try to control your cough as much as possible. You should only cough when you have to expectorate.

Cover your mouth with your handkerchief or hand when you have to cough.

Your expectoration or spit contains germs and is dangerous to yourself, your family, and your neighbors when not properly taken care of.

When in the house always spit into a spittoon half full of water; empty the vessel in the closet at least once a day and rinse it with boiling water.

It is much better, however, to use paper handkerchiefs, which can be burned after use. The nurses of the department of health will supply these.

When outdoors, spit in one of the paper handkerchiefs furnished and put it in the paper bag, burning bag and all on your return home.

If you should be outdoors and have nothing with you to receive your expectoration, spit into the gutter. *Never spit on the sidewalk.* Never swallow your expectoration.

Pure fresh air.—Stay in the open air as much as you can; if possible, in the parks, woods, or fields. Do not be afraid of cold water. Avoid drafts, dampness, dust, and smoke. Dust and smoke are worse for you than rain and snow. Don't be afraid of night air; it is not harmful and contains less dust than day air.

Never sleep or stay in a hot or close room. Keep it always well ventilated.

Keep at least one window open in your bedroom at night.

Have a room to yourself, if possible; if not, be sure to have your own bed.

When indoors, remain in the sunniest and best ventilated room. The room should preferably be without carpets; small rugs may be allowed.

No dusting or cleaning should be done while the patient is in the room.

Cleaning should be done only with mops or moist rags.

Draperies, velvet furniture, and dust-catching materials should not be in the patient's room.

Food and feeding.—Take a half hour's rest on the bed or the reclining chair before and after the principal meals.

Avoid eating when bodily or mentally tired, or when in a state of nervous excitement.

Eat plenty of good and wholesome food. Besides your regular meals take a quart of milk daily, from three to six fresh eggs, and plenty of butter and sugar, provided they do not disagree with you.

Eat slowly; chew your food well; avoid anything which causes indigestion.

See that your eating utensils are thoroughly washed after use.

Do not smoke and do not drink liquor, wine, or beer, except by special permission; but drink plenty of good, pure water between meal times.

Always wash your hands thoroughly before eating, and clean your finger nails.

Rest.—Avoid all unnecessary exertion. Never run; never lift heavy weights. Never take any kind of walking, breathing, or other exercises when you are tired, nor take them to the extent of getting tired. The kind and amount of exercise which you should take will be prescribed for you by your physician.

Go to bed early and sleep at least eight hours.

If you have to work, take every chance to rest that you can when off duty.

When the physician prescribes a rest cure, either in bed or on a reclining chair, it must be carried out, either on the veranda, fire escape, roof, or in front of an open window.

Clothing.—Wear underwear according to the season. Don't wear chest protectors.

Dress comfortably and sensibly, and avoid garments constricting neck and chest.

Keep your feet dry and warm. Wear overshoes in snowy or damp weather.

Personal hygiene.—Keep your body clean and take a warm bath with soap once a week; take cold douches or cold baths according to the directions of your physician.

Avoid all bad habits.

Keep your teeth in good condition by brushing them regularly.

See that your bowels move regularly every day.

Shave your beard or wear it closely clipped. Do not kiss anyone.

Handle the soiled personal and bed linen, especially handkerchiefs, as little as possible in the dry state. When soiled, place these articles in water until ready to be washed.

Don't waste time or money on patent medicines or advertised cures for your disease; they are worthless.

Sweeping and dusting.—In sweeping a room raise as little dust as possible, because dust, when breathed in, irritates the nose and throat and often sets up catarrh. Some of the dust breathed reaches the lungs, making portions of them black and useless.

If the dust breathed contains the germs of tuberculosis or consumption—tubercle bacilli—which come from persons who have pulmonary tuberculosis spitting on the floors, the risk is run of getting the disease. If the sick person uses proper spit cups and is careful to hold a handkerchief over the mouth when coughing or sneezing, so as not to scatter spittle about in the air, the risk to others who live in the same rooms of getting the disease is inconsiderable.

Before sweeping bare floors, sprinkle moist sawdust on the floor. When the room is carpeted, wet a newspaper, tear it into small scraps and scatter these over the carpet. In sweeping, brush these scraps of paper along with the broom, and they will catch most of the dust and hold it fast, just as the sawdust does on bare floors. Do not have either the paper or the sawdust dripping wet, only moist.

In dusting a room, do not use a feather duster or dry cloths, because these do not remove the dust from the room, but only brush it into the air.

Do all dusting with slightly moistened cloths and rinse them out in water when finished.

In rooms with bare floors (in houses, stores, shops, schoolrooms, etc.), all dust can be easily removed after it has settled, by using a mop which has been wrung out so as to be only moist, not dripping wet.

REPORT OF DISINFECTION IN A PRIVATE HOUSE.

This certifies that the premises named herein have been fumigated, as noted, and in compliance with the regulations mentioned below.

NEW YORK, *July 13, 1911.*

Name of patient, *John Smith.* Age, *25.* Disease, *consumption.* Duration of illness, *6 months.* Residence, *1850 University Place.* Number of rooms disinfected, *2.* Number cubic feet, *3,000.* Disinfectant used: *Formalin, 18 ounces;* Sulphur, ... pounds. Paraform, ... grains. Time room left exposed to disinfectant, *6 hours.* Disinfecting solution employed, *Carbolic, 2 per cent.*

Name, *James Brown, M. D.,*
Residence, 933 East First Street.

In every case of disinfection the following regulations must be complied with:

All cracks or crevices in rooms to be disinfected must be sealed or calked, to prevent the escape of the disinfectant.

The following disinfectants may be used in the quantities named:

Sulphur, 4 pounds for every 1,000 cubic feet, 8 hours' exposure.

Formalin, 6 ounces for every 1,000 cubic feet, 4 hours' exposure.

Paraform, 1 grain to every cubic foot, 6 hours' exposure.

Carbolic acid, 2 per cent to 5 per cent solution, and bichloride of mercury, 1–1000, may be used for disinfecting solutions.

PART II. ABSTRACTS OF PAPERS BEARING ON EDUCATION.

RINGWORM IN THE SCHOOLS OF MEXICO.

Dr. Manuel Uribe y Troncoso.

Spanish Hospital, Mexico City, Mexico.

During the school year 1910–11, 2,784 pupils were separated from the public schools of the City of Mexico on account of ringworm. With an attendance of 34,168, this gives 8.2 per cent of ringworm (tinea) patients. In the municipalities outside of the federal district 365 scholars were excluded from the schools, which gives an average attendance of 23,265 scholars, with 1.5 per cent of tinea patients. The disease is widely disseminated in the schools. Considering the great number of children with tinea and the imperative necessity of keeping them out of school so as to prevent the spread of the disease, it was decided to make use of the X-ray treatment, which reduces the duration of the old methods of depilation by tweezers from two years to two or three months.

Two special schools were established for children affected with tinea, each with a capacity of about 300 scholars, and both located in the building occupied by the medical department.

In this manner the sick children are constantly under observation, treatments are given regularly, and the progress of the depilation watched. Moreover, the children, being enrolled for the school year in their respective schools, do not lose any time, and the treatment as well as the usual lessons are systematically pursued.

The number of children enrolled in the school from January to March, 1911, and in the two schools for boys and girls from July, 1911, until February, 1912, was as follows:

Enrolled boys	284
Enrolled girls	216
Individual exposures to the X rays	280
Total number of exposures	1,165
Children upon whom depilation took place	132

SCHOOL DISINFECTION.

Dr. J. T. Ainslee Walker.

New York City.

The presence of a certain proportion of infectious children in the school is admittedly unavoidable; the only apparently available weapon of defense lies in the everyday use of spray solutions of

disinfectants to be sprinkled upon walls and desks and floors of schoolrooms. In addition to recognized cases of diphtheria, measles, scarlet fever, and whooping cough in the schools, there always is a certain percentage of children who are merely carriers of disease germs without themselves being affected by the microorganisms which find lodgment within their bodies. These children are even a greater menace to their classmates than are the children who actually show visible symptoms of disease, because in the bacillus carriers the presence of the germ danger can not be recognized. Disinfectants used in sprays are much more effective than disinfectant gases, because the former lay the dust in the rooms, which, after all, constitutes the greatest carrier of disease germs from child to child.

Having regard to the constant recurrence of epidemics among school children and to the failure of all existing preventive measures, routine disinfection of schoolrooms should be given a thorough trial. In the absence of this precautionary measure, the infective material diffused by children in the unrecognized stages of certain infectious diseases must accumulate on the schoolroom floors and constitute a standing menace to the health of pupils and teachers alike. Conceding that the major part of school infection is due to direct contact, a certain proportion is also due to the inhalation of bacilliferous dust.

Routine disinfection was introduced into the elementary schools of Great Britain in 1907. An experiment extending over a year was carried out by the Buckinghamshire education committee with a view to obtaining reliable data. The result showed an appreciable superiority in the attendance at the disinfected schools over those at the nondisinfected schools.

For school disinfection, the liquid-spray method is preferable to that of fumigation, for three reasons. It costs less; it insures actual contact between the disinfectant and the infected material; and it prevents dust from rising. At the close of each day the classroom floors should be thoroughly moistened with an efficient germicidal solution, and the desks and seats wiped with a cloth wrung out of the same preparation. Once a week the process should be extended to include the walls to a height of 6 or 7 feet above the ground, and once a quarter the classrooms should be thoroughly sprayed from floor to ceiling.

CAMPAIGN AGAINST CONTAGIOUS DISEASES OF CHILDREN.

DR. WALTHER EWALD.

Academy of Social and Commercial Science, Frankfort, Germany.

Contagious diseases have either yielded to modern hygiene or have at least been greatly affected, excepting infectious diseases of children, which in part only are true children's diseases. The terrible effect

of contagious diseases of children is not merely disclosed by mortality statistics, but in a general decline of young people. The battle can not be the same as in other infectious diseases where we have to proceed against bacterial components. Exciting and disseminating agents are rarely found in children's diseases.

Among the characteristics of the four diseases, measles, scarlet fever, diphtheria, and whooping cough, are some of great importance, because they give hints how best to combat the disease. From an inquiry into morbidity and mortality by age periods we have learned that whooping cough is most prevalent and registers the highest mortality among infants, and that the other diseases appear most commonly between the ages of 2 and 5. If then we are to combat mortality in children's diseases, we must consider the fact that diseases intrinsically not so very dangerous may result fatally when they attack very young children, where rachitis exists and when they occur among the poor and especially in insanitary surroundings. It is against these conditions that we must direct our energies; we must isolate very young children, insist upon hygienic living quarters, and provide for proper feeding of infants. Either the afflicted or the unafflicted children may be isolated, and it is said that both measures have been resorted to in scarlet fever. It should perhaps be the duty of the authorities to provide living quarters for the healthy but suspected children. In diphtheria, antitoxin reduces mortality. All diseases should as far as possible be under medical treatment. In order to combat the diseases themselves special measures are necessary. An efficient agency for combating diseases might result from an organized special force of caretakers by keeping a record of all cases of sickness occurring at school. Such cases should be investigated and a physician consulted, and in case of necessity, brothers and sisters should be guarded against contagion. This method of protection might be further extended in connection with medical inspection of schools. In view of the large number of fatalities resulting from contagious diseases of children, systematic measures are necessary.

MANAGEMENT OF TUBERCULOSIS AMONG SCHOOL CHILDREN.

DR. ARTHUR T. CABOT.

Boston, Mass. (Died November 4, 1912.)

Proper measures for the prevention and control of tuberculosis among school children should look not only to the protection of children during their school life and to the cure of those that have active tuberculosis, but should aim at the education of all children in the essential facts of hygiene with, as far as possible, the cultivation of habits of living which will protect them later in life.

The plan of caring for feeble, anemic, and under-nourished children (of the class from which so many tuberculous children later develop) in open-air rooms, or indeed out of doors, with short hours of work and with extra feeding, has been so often tried and the results have been so satisfactory in improving the health and increasing the power of work, that the open-air treatment of ailing children is being more and more widely adopted. The benefits in health derived from this school work in the open air are so evident that it is hoped that it will be more and more supplied to the healthy as well as to the sick. Such provisions will meet the needs of all but the open cases of tuberculosis. Children with open, declared tuberculosis should be separated from other school children and should be constantly under close medical supervision. For them the recovery of their health is of the first importance and their schooling is of secondary consideration. Well-to-do parents can give their children proper care at home with such schooling as may be wise, but for the children of parents who can not afford this special care, some public provision must be made by which these children may be cared for and kept apart from other nontuberculous children. Two ways have been devised for accomplishing this: (1) Hospitals; (2) hospital schools.

Isolation hospitals would naturally give the most complete segregation of these children, but unfortunately only a small proportion of the parents are willing to have their children go to a hospital. The result is that in a community where only hospital accommodation is provided, the greater part of the tuberculous children go to the public schools, or when too sick for that they stay at home, spreading the infection through their family and friends. The hospital school affords less complete isolation than a hospital, but with a proper corps of nurses who follow the children to their homes and teach the parents necessary preventive measures, much in the way of prevention may be accomplished.

The school has the great advantage that the parents are willing to send their children to it. The nurses connected with the school are able to follow the children to their homes and so extend the hygienic teaching to the parents. Upon the whole, therefore, the hospital school is the best means yet devised for caring for the already tuberculous children.

STUDIES IN THE RELATION OF PHYSICAL INABILITY AND MENTAL DEFICIENCY TO THE BODY SOCIAL.

DR. ISABELLE T. SMART,

Department of Education, New York City.

The studies cover personal examinations of children reported by school principals and teachers as mentally defective and in urgent need of specialized training. Interesting data have been gained by

study of the nationality of the various groups. Heredity and environment are frequently evidenced in physical weaknesses as well as in mental defect. Alcoholism in parents produces stock degeneracy, both physical and mental. Sequelæ of many of the contagious diseases of childhood have a marked influence on the physical and mental well-being of the child.

The facts presented show the need of:

1. Greater latitude in the arrangement of school curriculum.
2. Greater scope in, and application of, school hygiene.
3. The need of an increased and more comprehensive propaganda in the instruction of mothers and fathers in the hygiene of daily life.
4. The absolute necessity of more school clinics and more hospital clinics arranged at hours to suit the needs of the school child, instead of, as at the present, during the hours of the school day.
5. The urgent need of after-care committees to guard and protect, in so far as possible, the children who suffer in any degree from mental defect.
6. The necessity for legislation to meet the present needs in the proper care of mental defectives and to prevent any reproduction of their kind.
7. The urgent necessity of the building of more colonies, in all our States, for the permanent care of aments.

EDUCATION OF IMMIGRANTS IN SCHOOL.

Dr. William E. Chancellor,

South Norwalk, Conn.

The relation of teacher and pupil with special reference to the education of immigrants in American public schools was presented. The observation of children of many races and nations, a detailed study of 1,500 cases out of 4,000 in all, and tests covering 40 points, mostly scholastic, but some physiological, seem to indicate the following conclusions which are submitted tentatively:

Conclusions: Brachycephaly, mesocephaly, and dolichocephaly in its two forms—Mediterranean and Teutonic—each has its definite temperamental meaning.

Certain races are precocious, others are normal or average, and still others are altricious—each of these conditions makes a temperamental condition as its phase or result.

In dealing with immigrants not yet familiar with American life and often not speaking the English tongue, a proper relation of temperaments of pupils and teacher is far more important than elsewhere. The school for immigrants becomes mainly an atmosphere of social feeling.

Muscular-motor young women seem to secure the best results in classes with great varieties of the foreign born.

Women of the same nationality with the prevailing nationality of the class come as second choice.

A certain highly sympathetic yet not excessively intellectual race, the Irish, and they of the female sex, bridge the gulf between the foreign child and the world that he must learn.

The work is concerned mostly with Italians, Hungarians, and Russian Jews, in kindergartens and primary classes, and seems to indicate grave errors in the careless practice of the times. The great business of these grades is to readjust the reactions to environment, to train in new and far more complicated habits than the ancestry ever achieved, and to bring into sympathetic relations new and often resented ideas. Thus certain races resent the idea of the finer courtesies to women, even to their own teachers, and often to their own mothers and sisters. Different races, because of precocity or altricity, must be handled very differently in inculcating such ideas. In short, education is individual, and this has a far deeper meaning than current schooling undertakes to express. Race temperament is one clue.

SERVICE OF MEDICAL INSPECTION OF SCHOOLS TO THE TEACHER.

Dr. Helen MacMurchy,

Toronto, Canada.

Organization.—Medical inspection of schools tends to better organization and so increases the comfort and efficiency of the teacher and protects her from infection.

New interest.—Medical inspection widens the teacher's horizon and brings the schoolroom into the sphere of interest of modern preventive medicine. The average school child may be made a sanitary reformer and the teacher is the only one who can do it.

Difficulties of the teacher.—If the pupil can not hear the teacher or see distinctly the words, figures, etc., referred to by the teacher, then the efforts which should help the child are partly or wholly lost, and the teacher's work is rendered harder and less fruitful. Medical inspection, by ascertaining the condition of the general health, eyes, ears, etc., and leading to the cure of any defects and diseases, helps the teacher to do the work of the classroom.

The teacher often feels that something must be wrong with the child, but either does not know what it is or fears that any attempt to direct the parents' attention to the defect will cause unpleasantness, or at best will not remedy the trouble. The medical inspector here becomes the teacher's helper, because the school physician can

not only diagnose what is wrong, but has the authority to cause it to be set right.

Mentally deficient children.—These pupils are the source of much difficulty to the teacher, often causing disorder in the class. Medical inspectors should remove these children to special classes, to their own benefit and to the great relief of all concerned.

The child as a human being.—Medical inspection of schools, dealing with each child personally, tends to impress on us the individuality of each child, and directs attention to his endowments of strength, special senses, etc. We are always trying to deal with human beings as soldiers, lawyers, children, women, Chinamen, or something less than human beings. The man or woman who is dealing with human beings as such (e. g., the teacher) is doing the highest kind of work.

The teacher's own health.—The health of the teacher suffers chiefly from—(1) Impure air and infection. Diseases such as common colds, pneumonia, tuberculosis. (2) Eyestrain, caused by poor lighting, etc. (3) Nervous strain, caused by constant demands on the will power, patience, self-control, association with immature minds, etc. The dignity of the teaching profession is increased by the fact that by the law of the country one of the other learned professions has been called to the teacher's aid and authorized to use modern, scientific methods to prevent school infection, to improve schoolroom hygiene, schoolroom habits, ventilation, lighting, heating, cleaning, and the general morale of the classroom. Medical inspection of schools may be expected to improve the health of the teacher.

FOLLOW-UP SYSTEM IN MEDICAL INSPECTION.

Dr. Thomas A. Storey,

College of the City of New York, New York City.

In the department of work under the author's supervision, an attempt has been made to secure a method of instruction in hygiene which will develop permanent health habits in the individual. Medical inspection becomes a part of a method of securing information concerning the hygienic needs of the individual, and a basis on which the individual may be given advice bearing upon his personal health problems.

The important feature in the plan lies in the method of following up instructions to the individual. The percentage of parents that refused to secure treatment for their children during the year ending June 1, 1911, was seven-tenths of 1 per cent, and for the year ending June, 1912, eight-tenths of 1 per cent.

An outline of the routine involved in following up this instructional advice is given. A card-index system is employed and a "conference

card" is made out and filed; another card is given to the pupil, files are gone over every day or two, and cases followed up. The success of this "follow-up" system during the year ending June 1, 1912, justifies the following conclusions:

First. This method of medical inspection is effective, securing the repair of physical defects and correcting unhygienic conditions in over 90 per cent of cases. It is improving the physiological efficiency of at least a thousand boys every half year.

Second. This plan of individual instruction in personal hygiene has met with the support of the parents of practically all of the boys. Such support is essential to success.

Third. It is safe to expect that this continued personal relationship, extending throughout the high-school period and covering the first two collegiate years, will develop permanent habits of personal health control in many if not most of the boys under supervision.

HYGIENE OF CHILDREN'S TEETH.

WILLIAM H. POTTER, D. M. D.,

Professor of Operative Dentistry, Harvard University, Cambridge, Mass.

Until recent times, an incorrect emphasis has been given to the functions of the teeth. Much stress has been laid upon the part which they play in forming an attractive facial expression and in the production of spoken words. Comparatively little has been said in regard to the necessary part which they play in the preparation of food, so that it can be readily digested and thoroughly assimilated, which secures the development and upbuilding of the body and its fortification against disease. If the child is to have the physical benefits which come from a thorough digestion and assimilation of its food, if it is to acquire intelligence as to the kinds and quantity of food which are suitable for the development of the body, sound teeth, properly articulated, are absolutely essential.

Decayed and diseased teeth, on account of their defective surfaces, not only make a thorough treatment of the food in the mouth impossible, but they are the means of producing, developing, and nourishing that which is hostile to the child's physical welfare. The pockets of decayed teeth harbor many bacteria of a serious sort, notably those of diphtheria, pneumonia, and tuberculosis. If pockets of decay did not exist, harmful bacteria would have a much less favorable resting place in the mouth; their numbers could be reduced to a minimum and the chance of infection also lessened.

The actual condition of children's teeth can be best studied in our public schools. Examinations have shown that 70 to 90 per cent of all children in the public schools have defective teeth. The treat-

ment of defective teeth of children in public schools and institutions, whereby unclean, inefficient mouths have been made and kept clean and efficient, has been followed by a notable increase in the general physical health of the child.

It is without question of the greatest importance that children have clean and healthy mouths. How can it be brought about?

1. In all public schools there should be careful instruction given as to the nature of the teeth; their uses; the diseases which attack them; and the methods for preventing or diminishing these diseases. Children and their parents should be taught that the cleaning of the teeth and their thorough use upon hard foods will much reduce and perhaps prevent decay. School-teachers must assume an oversight in regard to their pupils' teeth.

2. Examinations of the teeth of all school children should be made at least twice a year.

3. Establish in school buildings school dental clinics in charge of dentists paid by the municipality. Add the services of a dental nurse, if the law makes them possible. These school clinics are to serve only those unable to consult a private dentist. A small fee should be charged in every case if possible.

4. Begin work upon school children before serious decay has occurred in their permanent teeth, and continue the supervision and necessary repair work through the twelfth year.

DENTAL HYGIENE FOR PUPILS OF PUBLIC SCHOOLS.

Dr. S. Adolphus Knopf,

New York Post-Graduate Medical School, New York City.

The existence of bad and decayed teeth is a disease of the masses as much as is tuberculosis, and as such it must be combated particularly in children of school age.

Just as we have societies for the prevention of tuberculosis, for the prevention of venereal diseases and alcoholism, representing the three great diseases of the masses, so should we have a society for the treatment and care of children afflicted with dental diseases. This society should be composed of all classes, medical and lay people, just as are the above-mentioned classes of societies. It would enable everyone who has the children's welfare at heart to contribute according to his means. The funds thus collected would materially aid to defray the expenses of taking care of the school children's teeth. Such a national society exists already in Austria. This society is composed of high officials of the Empire, statesmen,

pedagogues, physicians, teachers, and people of all sorts of professions and trades.

Let us have free and partially free dental clinics; let each child be carefully and practically reexamined for every possible physical and mental deficiency; let no child pass through life with a pathological or esthetic defect which can be prevented by timely treatment and care. The result of such provision will be better health and happier citizens.

UNIVERSAL SYSTEM OF MEASUREMENTS.

Dr. Leotardo Mátus Z.,

Santiago, Chile.

It has been years since scientific studies enabled us to determine accurately where the best racers are bred, but as yet no system has been established by which we can ascertain accurately where the most uniformly constituted human being is found; for anthropologic and ethnologic studies have not yet attained perfection. The basic factor preventing the complete study of the human race resides to-day in the lack of a universal standard of measurement.

Past congresses have been unable to determine upon the principal measurements to be applied to the individual. There is need of instruction in technique applied to the *living* person. The establishment of a universal standard of measurements, uniform apparatus, and uniform method of procedure are essential.

DEVELOPMENT OF HYGIENE IN EDUCATIONAL INSTITUTIONS.

Prof. Dudley A. Sargent,

Harvard University, Cambridge, Mass.

Physical training was first introduced into our educational institutions largely as a health measure when one or two college presidents and prominent educators called attention to deterioration in health of college students. Amherst was the pioneer college in this movement, and in 1860 appointed a professor of hygiene and physical education, and a few years later a number of other colleges appointed directors to their gymnasia.

The students were required to attend a few lectures on physiology and hygiene, supplemented by required work in the gymnasium, both without credit. The growing athletic interest in colleges was another agent in establishing physical training in educational institutions. It was not until stimulation toward physical training was aroused through ambition to get into good physical condition for athletic con-

tests, or to excel in some sport or game, that our students found an incentive to adopt improved methods of living, or, in other words, began the practice of applied hygiene.

The college missed that early opportunity of placing before the students, through credited instruction, a vital and individual responsibility in regard both to their own health and to that of the community. The students, not being given a compelling object for which to strive, evolved their own aims through athletics. This hygiene interest has been evolved also among those striving to increase the efficiency of their lives from a commercial standpoint. Here again, the vital stimulus of necessity to be physically fit for labor, and to produce that labor under sanitary conditions, has resulted in a regard for public hygiene which the colleges have long ignored as an integral part of their curriculum.

There were several causes why the college failed to recognize the dignity of personal hygiene in practice as well as in theory; first, the baneful influence of all the evils of "professionalism;" second, the difficulty of getting young men of character and ability to take up physical training as a life work. Another factor lay in that separation of the student body whereby one class was prone to neglect their mental work and carry athletics to excess, while the other was encouraged by the premium put on scholarship to neglect their physical well-being.

But we are learning to broaden our conception of education, especially in realizing the bearing of physical conditions upon mental and moral life. Up to the year 1910 Dr. Meylan estimated that 98 per cent of the 136 colleges and universities in the list of the Carnegie Foundation had gymnasia, 94 per cent had regular instruction in gymnastics, and 80 per cent in athletics. In 75 per cent of these institutions the director of physical training is a member of the faculty, and in 87 per cent some form of physical training is prescribed. A recent investigation of 390 colleges, universities, mechanical and agricultural schools, etc., all over the United States shows that about 43 per cent of all, and 70 per cent of those that have recognized departments of physical training, have well-defined courses in personal hygiene, sanitation, and public health, either connected with physical training, or general electives.

The chief value, up to the present time, of physical training and hygiene has been in increasing the functional power of the individual. It now rests with our higher institutions of learning to transform that power from an individualistic tendency into an awakening of public consciousness, through realization of the intimate connection between education and the demands of society.

TRAINING IN PERSONAL HYGIENE IN PRIVATE AND PUBLIC SCHOOLS.

Prof. JOHN W. RITCHIE,

College of William and Mary, Williamsburg, Va.

Members of this congress regard hygiene as important, because they realize the possibilities there are in it for mankind. School authorities and teachers give little attention to hygiene because they have no comprehension of these possibilities. We must first of all convince teachers that health can be earned and purchased. Nothing so quickly brings them to a realization of the preventability of disease as comparative morbidity and mortality tables accompanied by simple explanations of the fundamental causes of disease.

Systematic instruction in the principles of hygiene is necessary to keep pupils from becoming lost in the multitude of details. This instruction should be founded on a solid knowledge of the structure and functions of the different organs of the body, and of the principles governing metabolism and microbic infection. As long as the people of countries like the United States persistently follow hygienic fads and fail to discriminate between arrant quacks and reputable medical practitioners, it is an exceedingly short-sighted policy that desires to exclude from our school courses in hygiene those fundamentals of anatomy, physiology, and bacteriology which throw the broad guiding lines through the maze of hygienic practice.

The teaching of hygiene should be begun before the habits of the child are fixed. Ordinarily nothing short of a complete collapse of the health will shake an adult out of his accustomed habits of eating, sleeping, and working. Even some of the world's authorities on hygiene daily violate the rules they lay down for the public because they formed their habits of living before they acquired their knowledge of hygiene. The teaching of hygiene should be begun while the child is yet in the plastic age, so that he can be sent out from school with a physical expression of his hygienic instruction in the habits of his life.

Individual attention should be given to the hygienic habits of the child. Toothbrush clubs, fresh-air clubs, and other organized hygienic efforts are very valuable in fixing correct living habits. Much can be done to develop a right attitude toward hygienic questions and to fix the habit of properly regulating local environment by good hygienic conditions in the schoolroom and in the home.

THE PUBLIC SCHOOL AS A FACTOR TO LESSEN INFANT MORTALITY.

Dr. Henry L. Coit,

Newark, N. J.

A comprehensive plan to check sickness and death among infants and young children is proposed by adding the French plan to the Manchester plan for "Little Mothers" and providing that the "Consultation for mothers" shall be conducted within the public school and finally become a part of its system.

The best means of preventing sickness and death would be to raise the living power of the individual to what is called immunity. If we could apply this principle to infancy and childhood through educational and prophylactic measures, we would bring about the greatest possible physical efficiency in manhood and womanhood.

While physicians have led in this crusade against infant mortality, it is strictly a problem in preventive medicine, and therefore clearly to be solved by educational methods, which should be applied by the people (the State), at the expense of the people, and for the people.

It can not be repeated too often that the most fundamental cause of infant and child mortality, expressed through many channels, is ignorance, and the most potent influence which will destroy and remove it is applied knowledge.

The instruction has, therefore, been given by private philanthropy in hospitals and infant welfare stations at a few isolated points and has been made available for comparatively few of the great mass of mothers who need it most.

PHYSIOLOGICAL AGE IN EDUCATION.

Dr. C. Ward Crampton,

Director of Physical Training, Public Schools, New York City.

Children should be classified according to their physiological development, rather than according to their school age in years. From birth to maturity children develop at different rates, some outstripping others in the race, so that we find at the age of 14 about one-third who are already men and women, one-third in a transition period, and one-third quite immature. The difference between the mature and immature of the same age is so marked that it is astonishing that the idea of separating them for educational purposes has not occurred to our school authorities. The mature group are 30 to 50 per cent heavier, 30 to 50 per cent stronger, and 10 to 15 per cent taller than the immature group of the same age. The mental abilities show an even more striking difference; the type of memory

changes from rote to associative; the mental grasp is increased by an influx of newly ripened instincts, resulting from the change from an unsexual to a sexual existence. The whole attitude toward life becomes attached to manly or womanly things, and the business of childhood is put behind. All these changes occur at about the time that the voice deepens, the second molar teeth arrive, and other easily recognizable signs of maturity appear. In short, of those who are from 12 to 15 years of age, we find some are young men and others are children, regardless of their ages in years or progress in school. We find the young men with their ripened potential abilities sitting on the same benches, taught the same lessons, and subject to the same discipline as children, and the results are quite as poor as they would naturally be under these circumstances. The fundamental fact that the immature and mature are wholly different and should receive different educational and social treatment is disregarded. In the elementary school the mature do badly; in the high school, frankly fitted to their needs, they do 20 to 50 per cent better than the immature. While it is at this point the educational system on the inflexible basis of scholasticism and chronological age breaks down, it suffers from a lack of rational classification wherever mature and immature children are brought together in the same classroom.

SCHOOL CHILDREN OF THE STOCK YARDS DISTRICT OF CHICAGO.

Dr. Caroline Hedger,

Chicago, Ill.

Statistics indicate that almost 50 per cent of the children of the Stock Yards district showed material retardation in the two schools in the district from which the 200 pupils studied were taken. In the region in which they live the smoke comes down in clouds, and with it comes the smell of the fertilizer plants. This is not conducive to deep breathing or sound sleep, and the children impress one as lacking oxygen, being round-shouldered, thin, and rather pale. Statistics show also that the children as a whole are bad, physically, in almost the direct proportion as they receive insufficient food, have little room to live in, are forced to sleep in crowded beds, and have the reflected worry from taxes and mortgages. They have not the spirit and the nervous balance to make their grades. If the child grows inactive, discontented, becomes idle and criminal, is the child to blame?

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GERMAN INDUSTRIAL EDUCATION AND ITS LESSONS FOR THE UNITED STATES

By

HOLMES BECKWITH

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, April 24, 1913.

SIR: It is generally conceded that Germany has done more toward adapting industrial education to the needs of the people than has been done in the United States. Conditions in the United States differ widely from conditions in Germany, and the details of adaptation must therefore be different, but the underlying principles are the same. In arriving at an understanding of these principles, and for suggestions in applying them under American conditions, a clear presentation of industrial education in Germany can not fail to be helpful. I therefore recommend that the manuscript prepared by Dr. Holmes Beckwith, and transmitted herewith, be published as a bulletin of this bureau.

Respectfully,

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

PREFACE.

The purpose of the present study is to ascertain in what ways we in the United States may develop industrial education so that it may be of the greatest service to industry and to industrial workers, as well as to the whole people. The economic viewpoint and economic aspects have dominated the pedagogical, and the practical outcome has at all times been kept to the fore. Industrial education for the masses, for the rank and file of the workers, has been the chief concern. I have not concerned myself with agricultural nor with commercial education, however important these fields may be. Industrial education for girls and women has been taken up but slightly.

In the United States we lack large practical experience with industrial education for the mass of workers. Of all countries, Germany has had probably the largest and most fruitful experience with such education and has most to teach us. To learn at first hand from German experiences, I spent the summer of 1911 investigating industrial education in Germany. The cities visited were selected with a view to their importance industrially and include a number of the chief industrial centers in various lines of manufacture. The following cities were visited: The city State of Hamburg; Leipzig, Dresden, Chemnitz, and Plauen in Saxony; Munich in Bavaria; Mannheim in Baden; and Berlin, Magdeburg, Frankfort on Main, Coblenz, Cologne, Dusseldorf, Elberfeld, Barmen, Dortmund, Essen, Duisburg, Crefeld, Munchen-Gladbach, Rheydt, and Aachen, in Prussia. Numerous industrial schools of all grades were visited, a large proportion of which were in operation. Inquiries were made of school directors and teachers, and members of school boards, as to the organization, methods, and results of the schools. The relations of the schools to and their results on industry, and the attitude of industrial employers to them, were especially investigated. In almost every city the chamber of industry was visited and inquiries made of these bodies, which are the best fitted of all to represent the opinions of the masters. In addition, a considerable number of school reports and other printed data were collected, of which one could learn only when on the ground.

It may be questioned whether German experience is likely to be largely useful to us in the United States, on account of our differences, economic, political, and temperamental. In Part II I shall note some of the economic differences. The psychological and political differences are well known. Suffice it for the present to say that I believe these constitute no essential bar to our adoption of

such features of German industrial training as I shall recommend. It is to be understood, however, that details may and probably must be modified; at times this modification may approach the essentials. It is as yet too early to say what these modifications will be.

Two terms used require special mention. The German term "Fortbildungsschule" has usually been translated "continuation school." This translation does not give the accurate meaning in most cases where the term is used. Following Dr. A. A. Snowden, in his book, The Industrial Improvement Schools of Wurttemberg, published by Teachers College, Columbia University, in 1907, I have rendered the term "improvement school." In case of a few schools that *are* merely continuation schools, merely continuing the subjects of the common school, the same term has been rendered "continuation school." It is believed that this distinction in terms will clarify a real distinction in meaning, and that the scope and aim of almost all German Fortbildungsschulen are much better represented by the term "improvement schools."

The term "trade school" when applied to the United States is used, agreeably to current usage, to mean a school which teaches the operations as well as the science of a trade or trades. The same term when applied to Germany is used in a different sense, agreeably to German usage as to terms and practice as to schools. A "Fachschule" in Germany is a "specialty school" or "trade school," and such a school may teach the practice of a trade or trades, or may and often does confine itself strictly to technical (theoretical) training.

My gratitude is due to Prof. Henry R. Seager, of Columbia University, for his advice and criticism. A number of others, loyal friends of industrial education, kindly gave me their counsel. I acknowledge especially the aid of Prof. Charles R. Richards, director of Cooper Union, New York City, who suggested many of the topics which I later investigated; Dr. A. A. Snowden, of the New Jersey Commission of Industrial Education; Prof. Paul Hanus, of Harvard University, chairman of the Massachusetts Commission on Industrial Education; Prof. John Graham Brooks; Prof. M. E. Sadler, of the University of Manchester; and Mr. Charles H. Morse, of the Massachusetts Commission on Industrial Education. I can not here acknowledge by name the numerous German schoolmen, chamber of industry officials, and others, who received me very courteously and with detailed care aided me in my inquiry. To them, as a group, I give my hearty thanks. Two men I will mention whose help I especially appreciate, Herr Schulinspektor August Kasten, of Hamburg, and Herr Direktor Kandeler, of the Second Compulsory Improvement School of Berlin. Finally, my greatest debt is due to my wife, for her criticism and her patient and careful performance of the arduous clerical labors necessary for preparing the book for publication.

I offer the study for the earnest consideration of those who wish to see the industrial efficiency of our citizens increased.

HOLMES BECKWITH.

GERMAN INDUSTRIAL EDUCATION AND ITS LESSONS FOR THE UNITED STATES.

PART I. THE UNITED STATES.

CHAPTER I.

THE APPRENTICESHIP SYSTEM.

When we ask by what means are our industrial workers now trained for their work we must, to answer intelligently, examine into the present status and tendencies of the apprenticeship system. If these be such that apprenticeship meets, and promises to continue to meet sufficiently, the needs for individual training, what function have industrial schools to perform? That apprenticeship, in combination with all other activities now in the field, does not adequately meet present needs is shown by the complaint heard from many sides of the lack of skilled workmen.

The apprenticeship system took its rise in medieval handicraft work. A youth would bind himself to a master workman for a period which came in most cases to be fixed at seven years, work for him, and in turn live in his house and be taught "the art and mysteries" of his trade. The personal relations were exceedingly close, and the personal factors dominated the technical—conditions under which the system was at its best. The interest of master united with that of the apprentice in seeking thorough training for the latter, because the long apprenticeship gave the master abundant chance to gain, if he had trained his apprentice to become a skillful worker. The result was a system which, for the type of industries of the day, was probably better than any other which could be devised. The apprentice and his master were in the early days of the system on an approximate social equality in the sense that they came from the same social class. The apprentice looked forward to becoming within a few years a master himself, and this anticipation was often fulfilled. In the later middle ages, the guilds, or organizations of the masters of a craft, opposed such improvement of the status of the apprentice and tried with much success to restrict mastership to the families of guild members. Other great defects of the medieval system were that the apprentice was required to spend much of his time doing household

tasks and other drudgery which advanced him little or not at all in his craft training, and the period of apprenticeship was often longer than was necessary thoroughly to learn his trade.

In the United States apprenticeship in its early stages was much like the system in medieval times. Legal indentures were the rule, in which parent or guardian, justice of the peace, or benevolent society, acting for the youth, bound him out to manufacturer, merchant, craftsman, or mariner, usually for the period terminating at his majority.[1] Both parties appeared in court and swore to carry out the provisions of the written indenture, whose terms were made to suit the special desires of the parties concerned. The policy of the State was to have all youths of artisan class taught a trade, and neglected and orphan children provided with a home. Thus any failure of the employer to carry out his contract made him liable to damages. The State further protected the apprentice by requiring from him promises of good behavior, while he also was punishable for violation of his obligations. Parents desired indentures to insure to their boys a chance to learn a trade fully, while employers desired the contract that they might be protected from loss of the services of the apprentice during his last and most valuable years of training. The indenture involved a real loss of personal liberty; and much of the law of apprentices, as that concerned with runaways, classed them, in effect, as slaves. The contract assumed an equality of master and apprentice which did not, in fact, exist. This inequality appeared in its worst form in the compulsion put on the apprentice, as in medieval times, to do odd jobs by which he learned nothing and by which his term of apprenticeship was unduly extended. The apprentice found himself after a time doing as good work as a journeyman while he must for years accept an apprentice's meager wage. A feeling of resentment against unjust treatment developed in his mind and frequently vented itself in slighted work. Expanding ideas of personal liberty in the mind of the apprentice, in which he but followed the spirit of the times, conspired with industrial changes to cause the gradual decline of the use of the indenture.[2]

The industrial revolution ushered in methods of production and transportation whose results on industry as well as on social life generally are clearly marked. Among others, the concentration of industry, the increase in the use of capital, organization of workers in a hierarchy of ranks, and the use of machine tools, conspired against the apprenticeship system. The technical elements have come, in most of our modern industries, to dominate the personal, at least in the sense that relations of man and man are chiefly determined by technical considerations. Now the best in the apprenticeship system depends on personal relations for its efficiency, on mutual

[1] Motley, J. M. Apprenticeship in American trade unions. Pt. I, ch. 1. [2] Ibid., ch. 1, p. 17.

understanding and adaptation of master and apprentice, teacher and taught. The master craftsman of the earlier days, who was often at the same time merchant, has given way to the entrepreneur, the administrative and financial head, and to the master craftsman who works for wage as superintendent, foreman, or skilled worker. The former, our modern entrepreneur, no longer works with and teaches his apprentices; he delegates those functions to subordinates; takes, as a rule, less personal interest in the welfare of his apprentices, and concerns himself chiefly with other, and to him apparently, more pressing matters. Moreover, the necessities for competing for a wide, and in many cases a world market, and thus increasing output and lowering cost by every possible device, have left little time for superintendent, foreman, or journeyman to instruct apprentices. It is not to the interest of any subordinate to instruct the apprentice unless the entrepreneur requires it, and moreover pays for it as fully as for regular work. Consequently, in the great majority of shops, the apprentice is compelled more and more to shift for himself and "pick up" his trade as best he may, which is generally not very well. Pieceworking journeymen would, it is said, not even deign to shut a door unless their comfort required it; still less would they show an apprentice how to do anything. Even a journeyman paid by time is likely to find, in the long run, that instruction given to apprentices is at his own cost and means just so much less bread and butter in the mouths of his family. An example of this condition is given by the amusement with which a printer speculates as to the result to a journeyman in a big city office who should have the temerity to enter on his time card, "Half an hour spent showing Johnny the why and how of the Smith job."

Why, then, does not the astute entrepreneur direct his subordinates specifically to instruct his apprentices and make it worth their while to do so? The answer is that he does so at his own peril, and at the cost of an immediate money loss. If he be farsighted enough, and moreover can afford the immediate expense, he may shoulder the cost for the sake of having an assured supply of skilled labor for the future. But unfortunately farsightedness is not fully developed even in entrepreneurs. Further, all entrepreneurs now recognize that they secure their labor supply from a general market, whence, if they are able to offer sufficient inducement, they may obtain journeymen trained by others; while on the other hand, if they go to the expense of training apprentices it may be merely to see them later enter the employ of other, and possibly rival firms. Here we see one of the results of competition, which, when severe, generally leads competitors, especially smaller and weaker ones, to follow their immediate advantage with little regard to the future. So it comes about that modern entrepreneurs, in the main, do not feel

the necessity of thoroughly training apprentices and thus lack a sense of responsibility in the matter. The result is that each employer keeps up as well as he can, very many of them on the basis of skill taught by others. Apprentices learning their trades in the country go to the great cities as journeymen. So desired are city jobs that many contractors can get all the journeymen they need, and do not have to take any apprentices at all. This country is also dependent on the continuous supply of skilled workers who come here from Europe; without these, in fact, the situation would be more pressing than it is. The dearth of apprentices is met temporarily in many of the building and other trades by the employment of "helpers," in the building trades, men who seldom rise, while in some other trades, as the machinist, they usually are younger, and in time become journeymen.

The apprenticeship system has thus been declining for many years. By the sixties the old indentures had largely passed away, so much so that they were no longer the rule but the exception.[1] American industry was in a transition stage of adoption of division of labor and of machinery, and along with these changes the old system of apprenticeship was fast passing away. However, apprenticeship is not by any means dead yet, and of late years has seen a revival in improved form, adapted to the conditions and needs of modern industry. In the recent emphasis on industrial education the vitality of the improved apprenticeship system has been somewhat overlooked. Of its methods I shall speak later; suffice it for the present to point out some scanty yet significant indications of its strength. The Twenty-seventh Annual Report of the Massachusetts Bureau of Statistics of Labor for 1906 shows that out of 58 employers engaged in different industries 31 had a system of apprenticeship and 27 had no such system, while of 104 officers of trade unions 55 represented trades where apprenticeship was, and 44 where it was not, in force.[2] President Charles S. Howe, of the Case School of Applied Science, Cleveland, Ohio, sent a letter in 1907 to 400 manufacturers in Ohio, including nearly all the large firms.[3] He received replies from 124. Of these, 56 had an apprenticeship system, while 68 had none. Most of those training apprentices, however, gave them but the minimum training necessary that they might do their work fairly well. These figures should not be taken as indicative of the proportion of firms throughout the country which train apprentices. The average would probably be considerably lower, for the firms replying average among the larger and better and are in the more fully industrialized States. Messrs. Cross and Russell, of the New York Central Railroad, have discovered that "55 railroads have 7,053 apprentices in 368 shop

[1] Wright, C. D. The apprenticeship system in its relation to industrial education, 1908, p. 15.
[2] Mass. Bureau of Statistics of Labor, An. Rep., 1906. Pt. I, p. 7.
[3] Wright, pp. 18, 19.

plants, while 67 plants answering have no apprentices."[1] The National Machine Tool Builders' Association found that a large percentage of the firms employing apprentices were in New England, the Middle Atlantic, and the Central Western States; and, further, that the majority of them entered into formal contracts properly to instruct the apprentices during a stated period of indenture.[2] According to the Vocation Bureau of Boston:

> From the latest statistics available 43 States have laws relating to the employment of apprentices. Thirty-eight States provide that, in addition to the trade, the apprentice shall be taught the common English branches of education in some public or other school or through such means as the employer may provide.[3]

Most of these laws, however, are dead letters. As Prof. McCarthy writes: "The Wisconsin apprentice law was drafted in 1849 and is useless paper to-day."[4]

Notwithstanding this persistence of the apprenticeship system, the industries of the country are suffering from a great dearth of skilled labor. There can be little doubt as to the widespread nature of this dearth, whatever be regarded as its cause or causes. The nature of the lack is indicated in part by the summarized results of an inquiry conducted by the New Jersey Commission on Industrial Education, to which over 2,000 manufacturing, building, and other industrial firms throughout the State, employing 250,000 workers, replied. Workers in the building trades most urgently needed industrial education:

> Comparatively few can read or understand a drawing, and as for expressing their ideas on paper by means of sketches it is generally out of the question. In the important machine industries a knowledge of workshop mathematics or applied mechanics, ability to follow working drawings, and to make a suitable sketch, as well as familiarity with the practices of the trade, are matters in which many are found wanting.[5]

A further lack, caused by specialization, is discussed below.

Dr. Motley, in his monograph on Apprenticeship in American Trade-Unions, shows that apprenticeship has been successively regulated in the history of industries in the United States first by statute law or indenture, later by custom, then by trade-unions, and lastly by trade agreements between employer and employee, determined by a joint board. None of these methods ever held the field to the exclusion of others, and in their evolution they overlap each other. Nevertheless, the general order of dominance of the several methods is as given. As our industries developed into the modern form the indenture fell into

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[1] Wright, p. 43.

[2] Ibid., p. 18.

[3] Bulletin No. 1. The Machinist. Vocations for Boston Boys. Issued by the Vocation Bureau of Boston. P. 10.

[4] Report of the (Wisconsin) Commission upon the Plans for the Extension of Industrial and Agricultural Training. Jan. 10, 1911, p. 81.

[5] Rep. of N. Jer. Commis. on Indus. Educ., 1909, pp. 4, 6.

disuse, individual bargaining came into vogue, the power of the employer increased, and trade customs were openly disregarded whenever it was to his interest. Thus it was that trade-union regulation of apprenticeship was for some time concerned chiefly to uphold old customs of the trade. Later the unions attempted to determine the length of the term of apprenticeship. Finally, beginning in 1839, with a regulation by the Typographical Society of New Orleans, unions which had suffered a lowering of the average skill of their members by the widespread practice of runaway apprentices working as journeymen, and were thus in danger of a lowered wage, tried to limit the number of apprentices to some proportion of the number of journeymen. This proportion, though ostensibly such as would meet the needs of the industry, was generally determined by rough guesswork. The unions found themselves too weak effectively to enforce these regulations without the formation of national and international unions. Some unions have been strong enough to enforce their regulations on apprenticeship, but with very many this remains merely the ideal toward which the unionists strive. Even where national unions impose exact apprenticeship rules, locals hesitate to strike to enforce them, and so it comes about in general that only where there is a strong local union are such regulations enforced. Moreover, the assumption by the unions of the sole right to regulate apprenticeship matters has aroused strong opposition among employers, resulting in an intense struggle from which there has now emerged the present dominant system of regulation by joint agreement between representatives of employers and employed, often through associations covering a whole locality or local industry.[1]

According to Motley:

> Of the 120 national and international trade-unions, with a total of 1,676,200 members, affiliated in 1904 with the American Federation of Labor, 50 unions, with a membership of 766,417, do not attempt to maintain apprenticeship systems.[2]

These 50 unions include 35 unions of unskilled workers who are able to pick up a knowledge of their work in a short time; 11 unions, 7 of which are in railroad work, whose trades are recruited by promotion from associated positions, as engineers from firemen; 7 unions in whose trades machine work and minute division of labor have made apprenticeship impossible; and 2 unions representing properly professions rather than trades.

> The remaining national unions, that is, about 70 of the 120 affiliated in 1904 with the American Federation of Labor, with a membership of 900,000, together with some half-dozen unaffiliated national unions, attempt more or less successfully to enforce apprenticeship regulations.

"Of these 70 unions," says Motley, "only about 19 actually succeed in enforcing apprenticeship as a prerequisite to membership."[3] In

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[1] Motley. Pt. I, chs. 1–4. [2] Ibid., p. 53. [3] Ibid., pp. 58–60.

fact, neither employer nor union is able to control the apprentice situation satisfactorily, even in those points where they are in agreement. Apprentices, after obtaining a smattering of a trade or becoming half trained, frequently run away and take up work elsewhere as journeymen, a practice exceedingly hard to stop.

Minor motives of unionists in the regulation of apprenticeship are the desire to uphold the standard of workmanship because of pride in their trade and their skill and the need of a common measure of ability (or "standardized" ability) for the purpose of collective bargaining.[1] Unionists fear to attempt to secure a high wage rate, for some of their number, being poorer workmen, may be unable to reach it, and may thus injure the others by their competition. An approximate equality of ability, such as could best be secured by a uniform minimum of apprenticeship training, would greatly improve the conditions of collective bargaining as compared with the present basis of some thoroughly trained workers and some half trained.

An investigation of the Minnesota Bureau of Labor into strike and other statistics indicates that—

> the employers of the United States practically control the regulations of the training of new workmen in the greater number of American mechanical and manufacturing industries, subject, however, to State laws regulating child labor.[2]

The major responsibility for the conditions thus rests with the employers. Where employers have not attempted to regulate these matters, unions have often assumed the responsibilities and with them the powers of regulation.

In conclusion, the net result of our inquiry into the influence of trade unions on the scarcity of skilled workmen seems to be that to no great extent is that scarcity due to union action. We must look elsewhere for the chief causes of this lack.

Of some of these, incident to modern industrial changes, I have already spoken. One remains, and that perhaps the most important of all. That is specialization, or the division of labor. Though affecting different industries very unequally, the aggregate effect on apprenticeship and on both the demand for and supply of skilled labor has been very great. Roughly speaking, this effect has been greatest on the metal, on some of the leather and wood industries, on textiles, and on garment making. The subdivision of processes in some of these industries has been very great; for example, the making of a modern shoe involves about a hundred processes. In the past, all craftsmen proper were compelled to be skilled; now the tendency is toward a differentiation into many industries, the result of which is a demand for a large number of workmen of moderate skill, or in some cases unskilled, and a lesser number of highly skilled workers. The mere fact that a worker is running a machine does

[1] Motley, p. 73.

[2] Minnesota report, sec. xx, p. 378.

not mean that less skill is required of him than of the old craftsmen; it may be that he must be more skillful. There are machines, however, run by mere machine tenders who need have little intelligence or training. Such machines, requiring little or nothing but the indefinite repetition of a few simple motions, constitute in the demands from and consequent effects on the worker one of the greatest of our present-day problems. Another type of specialization does not involve mere machine tending, but rather the subdivision of what was once one trade into a number of branches, in which the tendency is for the worker to learn and practice but one. Thus the most advanced practice in carpentry involves the specialization of one man in door-hanging, another in tacking molding, another in laying floors, and so on.

The speed at which modern industries are run, in the ceaseless effort to increase output and lessen cost, militates strongly against the possibility of an apprentice learning more than a branch of a trade. The foreman or superintendent is strongly led to keep the apprentice at that work for which he shows an aptitude. To change him from machine to machine or branch to branch of the trade involves for the time a decreased output; and modern competition, as a rule, leaves litt e thought for remote results, especially when whatever benefit is obtained in the future may be reaped by another. Such is the condition when the apprentice is earnestly seeking to learn the whole trade; but many trades are unable to secure enough good apprentices because of the long years of service at low pay. The boys or their parents are unwilling to make the sacrifice and far too often accept better immediate wage in industries of lower grade, with less promise for the future, instead of learning a good trade.

This attitude, with technical factors in some industries, has resulted in bringing about what is called the special apprenticeship system.[1] Under this system the apprentice is indentured to one department only of a trade, for a period varying from one to two years, as against the average for regular apprenticeships of about four years. Such a system has been adopted by the National Association of Machine Tool Builders who declare that they are confronted by a condition and not a theory. When boys are transferred from one department to another, there is a loss of immediate efficiency, on account of which high enough wages can not be paid to attract a sufficient number of boys. The only way to obtain apprentices enough was to pay higher wages, and this required giving the boys work that paid their employers from the start. Boys were accordingly taken for a trial period of 240 hours and then indentured to one of the 11 departments: Turning, vertical boring mill, horizontal

[1] Wright, pp. 77–78.

boring mill, planing, milling, drilling, grinding, erecting, turret, vise, and scraping. The narrow range of attention allowed rapid advance in proficiency and a correspondingly high wage. At the start 12 cents an hour was paid, increasing successively to 14, 16, and 18 cents, and as high as 20 cents after a year and a half. A general apprenticeship frequently pays less near the end of a four years term than this special apprenticeship after a year's work. For comparison, the general apprenticeship under this association is three years, and the wages paid only 8, 10, and 13 cents an hour for the first, second, and third years, respectively.

So strong are the tendencies toward this system, so manifest its advantages, that we are bound to see its great development. Yet its chief advantages are immediate, and it is subject to disadvantages whose force does not at once appear, but are none the less vital. From the standpoint of the industry, or of the employer, an increase in the extent of this system means a labor force less adaptable and mobile. We must recognize that there is a fundamental difference between this type of specialization and that of physicians, lawyers, and scientists. The latter specialize on the foundation of a broad general training; the specialized apprentice knows nothing but his speciality. The weaknesses of the system affect the apprentice most. An apprentice, if all goes well, may after the completion of one special apprenticeship take up another; but few are willing to do this; meaning, as the change would, a decrease in wage for the time being from 18 to 12 cents an hour. He may earn as much pay and have as regular work as if he knew the whole trade; despite the fact that he will sooner exhaust the possibilities of interest in his work. But he has not the resource possessed by the man who is trained in the whole trade; his alternatives for employment are fewer, and a relatively slight change in industry or a dispute with his employer may leave him unable to obtain work. The displacement of workers trained in the whole trade by those acquainted with only a small part of it can scarcely fail to increase the dependence of workers on employers and so strike a blow at our democracy. Yet so great are the immediate advantages of this system to both employer and apprentice that we are likely to meet it in the future far more than we should like. Such specialization should be distinguished clearly from those forms where either the specialization is made on the basis of a previous broad training, as is usual in building carpentry; or, where the portion of a trade studied is so large and complex as to tax the abilities of the apprentice and give him considerable resource and alternative in later life, and is therefore tantamount in its extent to a whole trade of earlier years. Such subdivision of trades we must recognize as in the main necessary and desirable, in view of the great technical advances

of recent years, which add greatly to their complexity, and are probably free from the chief disadvantages urged above against narrow and exclusive specialization. Finally, extreme specialization in some industries, as in boot and shoe or watch manufacture, has made any semblance of an apprenticeship system nigh impossible.

In some trades the helper system is a substitute, in part at least, for apprenticeship.[1] The helper is an adult, and neither performs the same operations as the journeyman with whom he works nor is usually given any instruction in the latter's work. He "picks up" his trade if he can by watching the journeyman, and, occasionally, performs the operations of the trade proper. Helpers are largely present in the building and other trades where a man's strength is necessary. No definite term as a helper is usually necessary before entering the trade proper. The helper system is more important than apprenticeship in trades where experience is the chief factor in proficiency, as in printing and in the work of locomotive engineers. The fireman is the engineer's helper, as the brakeman is of the conductor, and each of these sets of helpers recruits the higher positions after passing through examinations.

Three different groups of helpers may be roughly distinguished, according to Messrs. Weyl and Sakolski: "(1) Ordinary laborers; (2) 'improvers,' 'holders on,' or 'junior workmen'; and (3) handy men."[2] The ordinary laborers, as hod carriers, seldom become journeymen. The second group, "improvers" or "junior workmen," do work similar to that of the journeymen who supervise them. Their wages are 25 to 50 per cent lower than those of journeymen; hence they tend to do the latter's work whenever possible, unless prevented. "Handy men" do not work under journeymen, but do odd jobs and less skilled operations. They also come into competition and conflict with the journeymen.

The helper system tends to recruit the ranks of journeymen more rapidly than does apprenticeship, and so has given rise to many struggles between journeymen and helpers or employers.

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[1] Weyl, Walter E., and Sakolski, A. M. Conditions of entrance to the Principal Trades. Bulletin of the Bureau of Labor, No. 67, Nov., 1906, pp. 768–777.

[2] Ibid., p. 770.

CHAPTER II.

OPINIONS OF EMPLOYERS AND EMPLOYED.

What is the attitude of the employer toward the present situation, and what that of the employees? In particular, how do they regard trade and technical schools as a means to help solve the practical problems confronting them? These are questions whose answers are of vital importance, for the cooperation of employers and employees alike is needed in any attempts at betterment.

The attitude of employers and employees toward restriction of apprenticeship is well shown in an investigation conducted by Prof. Charles R. Richards, and published as Part I of the Report of the Bureau of Labor Statistics of New York State for 1908 on Industrial Training and in Part I of the similar Massachusetts report for 1906. Returns from New York show the following: Two hundred and one firms employed the full number of apprentices allowed by union rules, while only 128 do not do so. Only 172 firms are prevented by trade-union restrictions from employing as many apprentices as they otherwise would, while 263 are not so prevented. Out of 309 firms stating that the apprenticeship system does not meet the need for skilled employees in their industry, 111 offer the trade-union restrictions as the cause of this lack, a larger number than favor any other single cause.

The only firms that state both that trade-union restrictions prevent them from having as many apprentices as they would otherwise have, and that they are employing the maximum number of apprentices allowed by union rules are glass blowing, book, job, and newspaper printing, bricklaying, electrical contracting, steam fitting, and tile setting.[1] Turning to the Massachusetts report we find questions and answers as follows: Is the apprenticeship system (if any) under the immediate control of the trade-unions? Twenty-one employers answer yes; 37, no; 46 union officers answer yes; 56, no. Do you consider it a good plan to restrict the number of apprentices? The employers vote no by 41 to 5; the unionists, yes by 71 to 18. If the employer were permitted to employ as many apprentices as he wished, would he dispense with the services of the journeymen now employed; or, in other words, would he employ apprentices to the exclusion of journeymen? The employers vote 39 to 4 in the negative; the unionists declare assent by a vote of 67 to 20.[2] These figures speak

[1] New York Bur. Labor Statistics, 26th An. Rep., 1908, Pt. I, pp. 29, 35, 36, 38–50.
[2] Mass. Bur. Statistics of Labor Rep., 1906, Pt. I, pp. 6–11.

for themselves. They show a natural disagreement of opinion between the parties concerned as to the results of trade-union restriction of apprentices. They also show, I think, that according to the employers' own opinion, the restrictions are less harmful than is usually thought by employees. So much for opinions on restrictions of apprentices. What attitudes do employers and employees take on the further questions of trade training?

The New York report mentioned above gives some statistics of the views of employers: Five hundred and forty-nine firms stated that they had difficulty in obtaining or in training skilled employees; 569 firms that they had no difficulty. The number of firms reporting that all of their skilled employees were trained in their establishment was 74; that the majority were so trained, 435; that a few were there trained, 447; and that they had trained none of their skilled employees, 210.[1] Where difficulty in obtaining or training skilled workers was reported, the minority of such workers were usually trained in the works; the firms that reported no such difficulty had trained the majority of their skilled workers.

As typical of the views of employers may be taken the report of the committee on apprenticeship of the National Association of Builders, who say that "apprentices must be taught and mechanics made in the future by entirely different methods from those in vogue" under the old apprenticeship system.[2] The method proposed is by preparatory private trade schools, affiliated with but not run by an association of builders, and involving a shortening of the ensuing apprenticeship by at least a year. James W. Van Cleave, ex-president of the National Association of Manufacturers, advocates a manual-training department in every public primary school and in free industrial high schools.[3] The committee on industrial education of the American Foundrymen's Association advocates industrial continuation schools which should become differentiated into trade schools as the pupils reach the age of 16.[3] These views of employers, favorable to trade and technical education, may be taken as representative. Carroll D. Wright declares:

> All employers realize the importance of this kind of education [that is, public industrial education]. Those who can afford it prefer their own system. * * * But it is very rare to find an employer opposed to some scheme of industrial education.[4]

Wright further states:

> Careful investigation shows that the demand for trade schools comes from employers who have no systematic, definite method of training their apprentices. These men are of the opinion that a public trade school would furnish them with a supply of

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[1] N. Y. Rep., p. 15.
[2] Minn. Rep., pp. 435, 436.
[3] Rep. of special committee on indus. educ., Amer. Fed. of Labor, 1910. Wright, p. 69.

skilled mechanics. Generally they have no more realization of the probable results of a public trade school, as far as producing skilled mechanics is concerned, than they have of the possibilities of a first-class apprenticeship system in their own works.[1]

These remarks, it should be noted, apply only to trade and not to the more general type of industrial schools. Those firms which have a first-class apprenticeship system themselves generally feel that no public trade school could meet their needs, but they are not opposed to such schools in general and desire them for the industry at large.[2]

The New York report mentioned above presents the results of questions asked of 1,182 employers and of the officers of 2,451 unions in the chief industries of the State, showing the attitude toward different types of industrial and trade schools.[3] The question was asked: "Do you favor a public industrial or preparatory trade school which should endeavor to reach boys and girls between 14 and 16 who now leave the common school in very large numbers before graduation? Such a school would not teach a trade, but would give a wide acquaintance with the materials and fundamental processes, together with drawing and shop mathematics, with the object of giving a better preparation for entering industries at 16 and better opportunities for subsequent advancement." To this both employers and unionists replied in the affirmative; the employers by a vote of 840 to 248, the unionists by one of 1,500 to 349. Among the manufacturers the different industrial groups favored this type of school in the following order: "Machine and metal manufacturers, building trades, wood manufacturers, printing and paper manufacturers, glass manufacturers, textile industries, clothing trades, leather manufacturers, confectioners." The skilled trades are thus most strongly in favor of such schools, and the only group opposed is the cigar makers. The question, put somewhat differently to the two groups, was asked whether trade schools for boys and girls were favored, which should give one or two years of practical training together with drawing and mathematics, provided (this part of the question sent to the unionists only) graduates should serve two years as apprentices or improvers. Both groups answered affirmatively, but by a less overwhelming vote than that for the more general type of industrial schools; the employers voted 744 to 341, the unionists by 1,232 to 567. The order in which the different groups of employers favored these schools is as follows: "Machine and metal manufacturing, building trades, leather manufacturing (chiefly boots and shoes), wood manufacturing, printing trades, textile industries, clothing industries, manufacture of cigars." Employers were further asked whether they thought the proposed trade schools could be "advantageously administered by the State or community at public expense

[1] Wright, p. 78. [2] Ibid., p. 69. [3] N. Y. Rep., pp. 38–50.

and operated on a noncommercial product." To this they replied in the affirmative by a vote of 582 to 348. Their answer to the question: Would such schools, if conducted by industrial establishments and operating on a commercial product, be practical? was negative by 529 to 405 votes. Thus every group of employers, with the exceptions of those manufacturing leather, cigars, and confectionery, preferred State or community to private management. Finally, to the query, would practical evening or half-time schools be of value in helping unskilled workers or those of low-grade skill to advanced positions requiring high-grade skill, the employers reply affirmatively by a vote of 738 to 305. The relative faith of the employers in the various classes of schools is indicated by the following table from the New York report:[1]

Industries.	General industrial schools.	Trade schools.	Evening schools.
Glass	1	3	2
Metals	1	3	2
Wood	1	3	2
Leather	2	1	3
Printing	1	2	3
Textiles	1	2	3
Clothing	1	2	3
Confectionery	1	3	2
Cigars	3	1	2
Building	1	3	2

A considerable number of employers thought evening trade and technical schools desirable. It was the general industrial school which won first place in the opinions of almost all; and it is noticeable that trade schools were placed last by all the industries commonly called highly skilled, except the printing trades. The net result, from both employers and unionists, is that general industrial schools are overwhelmingly desired; day trade and evening trade and technical schools are also desired, but less vigorously.

The National Association of Manufacturers has, since 1904, recognized the importance of the question of industrial education by the appointment of a committee which has reported annually since 1905. This committee, stirred by a realization of the paucity of skilled mechanics, has persistently advocated industrial schools. Moreover, it has claimed that trade schools alone can turn out finished workmen, without the need for any apprenticeship. In 1910, the committee went into the question of the sort of schools to be desired, and reported as follows:

> Great progress has been made throughout the country in approaching general agreement on the following points:
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> 1. That the interests of manufacturing industry require a new education for boys who are to work with tools and machines.

[1] N. Y. Report, p. 49.

2. That this industrial education must consist of skill and schooling and that these two parts are of equal importance; that they must be organically combined and that each will coordinate and supplement the other.

3. That real skill and suitable schooling can not usually be given in the ordinary public school by the average schoolmaster.

4. That the average manufacturing shop or factory is not likely to organize private trade-school departments in their works that will give the best results in both skill and schooling.

5. That real trade schools are feasible and practicable where a higher practical, efficient shop skill can be secured than has ever been known under the ordinary apprenticeships, and that this is possible even when one-half of the apprentice's time is devoted to schooling adapted to the life of the pupil.

6. That such half-time trade schools can be so organized and conducted that a superior high skill and a broader shop experience can be secured than the average manufacturing shop can give in its specialized modern factory, because there the object is to make money and not to make skilled, intelligent, trained workmen.

7. That such a real trade school must have well-equipped, productive shops, where pupils are taught the best methods of rapid, high-grade production by skilled working mechanics.

8. That such trade schools need not produce anything but useful, high-grade products, with a very small percentage of spoiled work or damage to tools and equipment—a smaller percentage of loss than occurs in the average shop.

9. That where such a trade school can be established, with modern buildings and equipment and a moderate working capital, well managed, it will not only be an efficient educational institution, covering the high-school period, but it will be productive and largely self-supporting.

10. That such a real trade school can be maintained with a course corresponding to the high-school course, persistently aiming to turn out working mechanics with superior mechanical skill and wide shop experience, plus good mental training. In this way a class of skilled American mechanics will be produced, meriting higher wages than the average mechanic, and the greatest good will come to wholesome organized labor and to individuals through individual merit.[1]

The committee further reports in favor of evening schools (general, industrial, and trade), half-day schooling each week for apprentices and other workers where the employer is willing to pay the regular wages while they attend school, and part-time schools. These schools are primarily to meet the needs of those now in industry. Similar schools are favored for girls and women, in which, besides industrial studies, home economics shall be given a large place. These several proposals constitute a highly important body of suggestions, which, if they are at all adequately backed up by the membership of the association, represent a great advance in definiteness of attitude toward industrial education. Whether or not we can wholly accept the program presented, I shall discuss in the conclusion.

In 1911 the committee on industrial education, having changed its personnel in part and studied the question further, reported again, this time very differently from their 1910 report. They no longer champion trade schools, but, as a consequence of German and other

[1] Proc. 15th an. conven. Nat. Assoc. Manufacturers, New York, May, 1910, pp. 259, 260.

European example, focus their attention and chief approval on industrial improvement schools. The National Association of Manufacturers, following their report, passed the following resolutions:

Resolved, That this association earnestly devote itself, with reasonable outlay of funds, to the promotion of industrial education, to the end that such education may be made available, as soon as possible, to every child who needs it.

Resolved, That we favor the establishment in every community of continuation schools, wherein the children of 14 to 18 years of age now in the industries shall be instructed in the science and art of their respective industries and in citizenship.[1]

Unionists have been much criticized for their opposition to trade and industrial schools. They did not for a long time understand the situation clearly, and many do not yet do so. Generally speaking, however, the attitude of union men has steadily become more and more favorable, until the approval indicated in the New York report has become a fact. The main stumbling block which prevented union approval of such schools was apparently the impression that their graduates were sometimes used as strike breakers, and that the atmosphere of the schools was often either hostile to unionism or not distinctly favorable. The charge that trade schools were used to displace skilled unionists by "half-baked" school boys, temporarily or permanently, caused unionists in many instances to regard them as "scab hatcheries." But if the graduates of trade schools are able to displace skilled laborers, does not this indicate that they are able to do the work required; and if so, do they not deserve the places? On the other hand, if they are distinctly inferior as workmen, why should the skilled workers fear them, and how can they, in fact, displace their superiors? I believe that no one answer to these questions is sufficient. Some of the work, doubtless, now done by superior workmen, masters of their trades, can be done substantially as well and at lower cost by inferior half-trained workmen who would be unable to perform many of the more difficult operations of the same trade.

The skilled workmen fear partial displacement by some such half-trained workers, the chief advantage of whom to the employer is that they are cheap. Temporarily also an employer may secure poor workmen to tide him over for a few weeks as best they may, in order to win a strike. Further, the presence on the market of a large number of poorly trained or of half-trained workers, does, I think, tend, through the difficulty of dealing with individuals strictly on their several merits, toward a lowering of the standards and thus of the wages of the whole group of workers. But in the main I believe that those who possess developed skill need not greatly fear those who do not possess it, and that unionists are in no serious danger from the

[1] Rep. of committee on indus. educ., 16th an. conven., New York, May, 1911, Nat. Assoc. of Manufacturers.

graduates of trade schools, except where they are now maintaining a monopoly of skill.

But unionists may retort that trade schools have in the past flooded some trades and have supplied strike breakers to employers by virtue of the superior advantages furnished to enter those trades as compared with others. Private money-making schools are especially condemned on this score, and judgment is often reserved concerning even philanthropic trade schools till these have shown themselves at least not antagonistic to trade union principles and practice. Admitting the alleged facts, what is the remedy? It is better facilities for learning all trades, as far as obtaining these is feasible. Then the number and capacity of the intrants into the several trades will tend to adjust themselves toward that condition where men of equal capacity and opportunities will be in trades of equal attractiveness. Increase of freedom in industrial and trade education will tend toward securing the best men for the trades needing them and able to pay them most, and thus to offer them most attractions toward securing less able men for less important positions, and so on to the lowest rung of the ladder. If unionists are trying to maintain wages and conditions of work, by restriction of intrants into their trades beyond what is necessary to uphold the standards of skill and prevent such excessive influx as would lower the wage below what equal ability secures elsewhere, they are doing injustice to those who would otherwise enter the trades concerned.

It has been noted above that unionists favor general industrial much more than trade schools. Their attitude, moreover, varies greatly with the trade concerned. They favor evening schools, for these seek principally to help those already in the trades and involve no danger of unduly increasing the supply of workers. Correspondence schools for like reason meet their approval. Apprentice or factory schools they generally approve, because of their practicability and because there is no undue increase in the number of workers. They are as yet opposed to cooperative schools, for reasons explained in the next chapter.[1]

The unionists probably appreciate the disadvantage of a too narrow specialization more than employers do, for the resulting burden falls chiefly on them. Thus the committee on industrial education of the American Federation of Labor, in a report which gives unanimous support to industrial education, states the principle that "public industrial schools or schools for trade training should never become so narrow in their scope as to prevent an all-round shop training," [2] and they further refer to "the injustice of narrow and prescribed training in selected trades by both private and public instruction." [3] To conclude this presentation of the attitude of organized labor, I

[1] Ch. 3, pp. 33, 34. [2] Amer. Fed. of Labor Rep., 1910, p. 24. [3] Ibid., p. 13.

cite the main provisions of the Page-Wilson bill, now before the Federal Congress. This bill is based on the Davis bill,[1] called in the American Federation of Labor Report: "Labor's Bill for Congressional Enactment." The bill can not, however, be said to represent exclusively any class. In the form reached July 24, 1912, it provides for annual appropriations by the National Government to the States, of a total, when in full force, of $14,780,000. Of this sum three million dollars is to maintain instruction in agriculture, industries, and home economics in departments of secondary schools. Three millions is to maintain instruction in the industries and home economics in separate secondary schools for the purpose. Three millions is to maintain instruction in agriculture and home economics in district agricultural high schools. Six hundred and forty thousand dollars is to maintain training for teachers of these vocational subjects in colleges, and one million dollars for similar training in normal schools. All the above grants are conditioned on the providing of a total of State and local appropriations equal to twice that of the Nation, in addition to any any costs of land or buildings. One million dollars is appropriated annually for branch agricultural experiment stations, and sums rising to a maximum of $3,140,000, annually for extension departments of State universities; these grants being conditional on the spending of an equal amount in total by State and locality, for the same purpose, besides providing permanent plant. All these grants are conditional on supervision by the Federal Government, in cooperation with State boards for vocational education, and the maintenance of certain standards.

With this evidence of the favorable attitude of the highest body of organized labor in this country, let us turn to another phase of the question. I have so far been concerned with the need for industrial education, which is shown in the condition of industry in the country to-day, and which is reflected in the views of those most intimately acquainted with these conditions. I shall now take up the question of how far those needs have been met in the United States. What industrial schools have we, and what are they accomplishing for industry?

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[1] Amer. Fed. of Labor Rep., 1910, pp. 20–22.

CHAPTER III.

INDUSTRIAL SCHOOLS IN THE UNITED STATES.

In the early days of our country, school and shop and farm were widely separated in function. Trades were so well taught by apprenticeship or by parents to their children that there was little need for the schools to dabble in industry and try to help in vocational training. These early conditions and similar ones preceding them, together with the scholastic ideals, are responsible for the rise of a tradition, especially among the schoolmen, that has been very hard to weaken—that the school should have nothing to do with industry. Its function was more general—to provide that mental equipment which is requisite in all walks of life. Thus the schools limited their efforts to the instruments of communication, and the superstructure reared on these, of history, literature, and science. As our society went through its marvelous development, and the apprenticeship system weakened, the schools maintained their traditional position, and the gap between them and industry became ever wider. Yet a variety of special types of schools arose from time to time which sought, apart from the regular public school system and its pinnacle of classical colleges, to bridge the chasm, to bring education into closer touch with life, and to minister to the needs of industry.

First among these were the privately endowed evening industrial schools, such as Cooper Union and the Mechanic's Institute of New York City, Franklin Union and Spring Garden Institute of Philadelphia, the Ohio Mechanic's Institute of Cincinnati, and the Mechanic's Institute of Richmond, Va. These schools, according to Dr. Charles R. Richards,[1] were almost all founded, or opened evening classes, during the fifties. They met with such a great demand for their services that similar public schools should have been called into the field, but the scholastic ideal was too firmly seated to make this feasible. The next development was the inauguration of institutes of technology, in the period of railroad and mining expansion following the Civil War. The Rensselaer Polytechnic Institute had, indeed, been founded in 1824, but its example was not emulated until 1865, when the Massachusetts Institute of Technology was established, followed within a few years by the Worcester Polytechnic Institute, Lehigh University,

[1] Richards, C. R.: Notes on Hist. of Indus. Educ. in U. S., in Nat. Educ. Assoc. Rep. of Committee on Place of Industries in Public Education, 1910, pp. 24–29. Compare also for facts below as to history of industrial education in the United States.

and Stevens Institute of Technology. These institutions were private, but were soon followed by similar ones of a public nature. The Morrill Land-Grant Act of 1862 has by its financial support, amounting to over $16,000,000, aided about 60 State universities and other institutions which carry on agricultural and technological education.[1] Some of the agricultural colleges coming under this act, and situated in the South, now offer genuine trade training not leading to a degree. Another movement, which began in 1868 by the founding of Hampton Institute in Virginia, was the industrial education of the negro race, a movement carried on with signal success in a most difficult field. In 1870 industrial drawing was introduced into the schools of Massachusetts, from which the movement has spread, until now the subject is generally required in the cities and larger towns. Manual training had its first beginnings about 1870 under European influence, while manual training high schools began to be founded about 1880. This movement spread rapidly, entered the primary school after 1887, and is now very widely spread throughout the country. In 1872, the first school of design was founded in Lowell, Mass., as an aid to the textile industry. Stimulated by this example, other similar schools and several textile schools have grown.

Trade schools proper are of comparatively recent origin. The first, the New York Trade School, was founded on private endowment in 1881. During the next 20 years only two important schools which trained in the mechanical trades were founded. These were the Williamson Free School of Mechanical Trades, near Philadelphia, and the Baron de Hirsch Trade School in New York City. These schools, together with the Miller School, of Albemarle, Va., which adds trade to general training, and two schools in San Francisco are all privately endowed. Not till 1907 were public trade schools established, beginning with the taking over of the Milwaukee School of Trades by the city under State law. Since then, trade schools have been opened in a number of cities.[2] Within the last few years, also, general industrial or preparatory trade schools have been much discussed and have been established as parts of the public school system in Rochester, Albany, and New York, and in six other cities in New York State; in Newton, New Bedford, and other Massachusetts cities, and elsewhere. Within the past few years, also, the so-called half-time system, or cooperation between school and shop, has arisen.

Such, in outline, have been the successive stages of the rise of the agencies of industrial education, to the consideration of which I shall now turn. Uncoordinated one with another, they have grown

[1] Seventeenth An. Rep. Commissioner of Labor, 1902, pp. 19–24. (A chief source, with Richards: Notes, etc.)

[2] Cf. p. 34.

up spontaneously, chiefly as the result of private initiative. We have no *system* of industrial education in the United States. And despite the expenditure of a considerable amount of energy and money on those schools and phases of our schools which are industrial in aim, the result is, for the great mass of citizens, very small indeed. We pride ourselves on democracy in education, and yet our higher technical schools are far more fully developed, and far more nearly meet the country's industrial needs, than our lower schools. Indeed the lower schools are all but lacking; the schools of the country are, as related to industry, top-heavy. Our institutes of technology and engineering schools and universities, which train industrial leaders and technologists, compare favorably with the best in Europe. But so meager is the provision for the masses that Mr. A. C. Humphreys, president of Stevens Institute, states the following results of an inquiry conducted by the international committee of the Young Men's Christian Associations:[1] Of 13,000,000 young men in the United States between 21 and 35, only 5 per cent have received in the schools any direct preparation for their vocations; of every 100 graduates of our elementary schools, only 8 obtain their livelihood by means of professional and commercial pursuits while 92 support themselves by manual labor.

Of all the schools or parts of schools in the United States which have an industrial character the following will be omitted from consideration: Agricultural schools, schools for negroes or Indians, higher technical or engineering schools, and industrial art schools. The attempt will be made to discover what has been done to forward industrial education for the great masses in industry. First in order, let us examine the manual training classes and manual training high schools.

Manual training began in the United States with schools of secondary grade and percolated downward into the elementary schools.[2] The educators who introduced it desired, in the words of one of their leaders, Dr. H. H. Belfield—

> to offer to boys what was called a more "practical" education than that offered by the ordinary high school; while avoiding a trade school, to give the boy an acquaintance with the forces and conditions of modern life, to give him the use of his hands, or, as Dr. Woodward phrased it, "to put the whole boy to school."[3]

Educators have quite generally regarded manual training as another mode of cultural training and as a means of formal discipline, valuable to train the observation and reasoning powers and to strengthen the will. "The manual-training high school," according to the National Education Association committee, "has never claimed to fit boys

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[1] Nat. Soc. for Promo. of Indus. Educ., Proc. 3d annual meeting, Bull. No. 10, p. 28.
[2] Nat. Educ. Assoc. Rep., pp. 80–115.
[3] Ibid., p. 86.

directly for industrial pursuits."[1] A succinct definition states that a manual-training high school is "a high school with a course in manual training in lieu of Latin and Greek."[2]

The records of graduates of these schools show that they do not train for the trades to an appreciable extent. Their graduates follow the most diverse lines, just as in any other high schools, as business and the professions, while a number go on to the higher technical schools and a number enter trades. According to the Massachusetts commission, out of 2,437 manual-training school students whose records were available but 52 were in mechanical trades. Further, the committee of the National Education Association declare that "with few notable exceptions, practically all of the existing industrial and technical high schools now operating in the United States as parts of the public-school system should be classed as manual-training high schools," according to the definition above, and not as technical high schools whose purpose is distinctly vocational, the training of industrial leaders of the lower grades. The general public expected from this movement more practical industrial results. These have not been forthcoming; but manual training has made for itself an enviable place in our system of general education, furnished its students a wider outlook from which to choose a vocation, and commended itself to large numbers of people. It is now probably best that the movement be continued as it is, and that the industrial function be accomplished by other schools, independent of our existing system in whole or in part, and managed primarily by men in close touch with industry.

Much more hopeful for industry is the recent inauguration of apprentice schools in shops.[3] A number of larger manufacturing and railroad companies, to increase the efficiency of their employees or to train up a generation of workers, have instituted schools in which their apprentices are taught such subjects as mechanical drawing, reading of drawings, shop arithmetic, strength of materials, mechanics, electricity, testing of machines, etc. The detailed arrangements differ from shop to shop, but in general the teaching is very practical, is intimately connected with the shop work, and is carried on by the method of concrete problems. The apprentices are usually paid for their time while in the school, just as in the shops, and are held to the same standards of attendance and discipline. Special teachers in many cases instruct the boys, generally in the school, sometimes in the shop also; the course of study is often carefully laid out by the consulting engineer or by some member of the firm. In some cases, as in the General Electric Co.'s plant at Lynn, Mass., a special apprentice training room is set aside for the purpose, and here the boys work at machines isolated from the rest of the

[1] Nat. Educ. Assoc. Rep., p. 95.
[2] Ibid., p. 87.
[3] Wright, pp. 28–56; Nat. Soc. Promot. Indus. Educ., Bull. No. 11, pp. 72–81.

factory. In some cases shifts of boys are kept alternately at the machines and in the school, thus obtaining the fullest possible utilization of the machines and of the services of the teacher. Usually only a few hours a week are spent in the school, though in some cases as much as half the time is so occupied. In the shop, the apprentices are usually advanced from machine to machine or department to department as fast as they become proficient, or at stated intervals. Sometimes they are required before leaving a machine to instruct another boy concerning it. In some few cases employees other than apprentices may also enter the apprentice classes. Prizes or other recognition of good work are often granted as useful stimuli.

Some companies conduct the schools largely to provide future foremen, designers, superintendents, and technical experts. In some cases examinations are held for those who desire to become apprentices, and also to determine proficiency on completion of the course; in others a common school education and physical fitness are required for entrance, while graduation or proficiency is attested by the personal knowledge of the teacher. The popularity of these apprenticeships is attested by the fact that in the better companies, at least, there are many candidates on the waiting list, and the companies can select the best fitted boys. Trial periods are the rule, as in most apprenticeships, and then the signing of a regular indenture. The school course usually lasts as long as the apprenticeship, and a good grade of work is required for its successful completion. The boys usually appreciate the superior advantages they receive for a thorough trade training and are often enthusiastic for their company. Some of the companies which have adopted systems of this sort are (with number of hours of schooling given a week): The Fore River Shipbuilding Co. (18 hours for 7 months); the New York Central lines (4 hours); the Santa Fe Railroad (4 hours); the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. (4 hours); the International Harvester Co., Chicago, Ill.; the Allis-Chalmers Co., of Cincinnati, Ohio; the General Electric Co., West Lynn, Mass. (7½ hours); the Lakeside Press, Chicago, Ill. (21 hours, 2 years out of 7); and the Solvay Co., Syracuse, N. Y. (alternate weeks in school and shop).[1] These companies and others which have adopted the system in some form are in the main large companies, and so far with them the system has worked well.

This suggests the query whether the system is applicable to companies of any size or only to large firms. The smallest number in any apprentice school conducted by a manufacturing company of which I have data is 28, the largest number 206, while the average is 69 apprentices. The railways show a much lower average, owing to the fact that at most division points there are but few apprentices;

[1] These data chiefly from Wright, pp. 28–56.

61 railways have 8,367 apprentices in 406 schools, or an average of not quite 21 to a school. The hiring of a special instructor for so few apprentices would be too expensive and is not strictly necessary; for these reasons the shop superintendent, chief draftsman, or other regular employee generally conducts the instruction and supervision, and in some cases the instruction covers little more than mechanical drawing. So far as the present experience with shop schools goes, it seems that instruction of comparatively few apprentices is feasible, that in most cases a small or medium-sized shop can not afford a special instructor, and that the apprentices thus lose in thoroughness of instruction. As to the smallest shops, the plan does not seem feasible for them. Even a class of 15 or 20 apprentices is not possible except in an establishment of from about 60 to 400 workers. In some industries, as in the building trades, the system is not applicable at all. The system is new, however, and may become a good solution of a part of the general problem. Railroad men are especially inclined to hold that no trade school can meet the highly special needs of their industry.

A modification of the system of apprenticeship schools in the shop [1] is found in an apprenticeship system where instruction is given outside of the shop but under the direction of the employers. The North End Union School of Printing, of Boston, is owned and conducted by an association of master printers. It offers one year of trade schooling at a cost of $100 to the boy, to take the place of the first two years of an ordinary apprenticeship, and then apprenticeship for four years to some master printer at a guaranteed wage steadily increasing from $9 to $18 a week. Some other firms "encourage" boys to attend night schools, but neither require such attendance nor offer adequate incentive to them to do so. Such systems are too weak to accomplish much.[2] The Baldwin Locomotive Works and some other firms, however, require their apprentices to attend evening school and study mechanical drawing and other courses in line with their shopwork.[2]

Akin to the last-named type is the part-time system, or cooperation between school and shop.[3] In this type the employers and a school or schools, usually public, divide the time of the apprentices according to different proportions, the bulk of the time usually being spent in the shops. The instruction given is technical, relating to shopwork, though it may include also some of a business and of a civic nature. In Beverly, Mass., the apprentices of the United Shoe Machinery Co. alternate, in two groups of 25 each, between the Beverly (public) industrial school and the shop. The boys are paid half the regular piece price for their work, and the company assumes the cost of the shop. In Fitchburg, Mass., apprentices of mechanical trades

[1] Wright, pp. 57–67. [2] Ibid., pp. 56–67.
[3] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, pp. 111–115.

are given one full year in the high school, followed by three years of alternate weeks in the shops of manufacturers as apprentices and in school. In Cincinnati, Ohio, apprentices are taught in an improvement or continuation school of the city for 4 hours a week and 48 weeks in the year.[1] "The school teaches the three R's, civics, mechanical drawing, blueprint reading, and good citizenship. Much attention is given to shop mathematics." Beyond the scope of the present inquiry, but illustrative of the part-time system applied to engineering education, is the cooperative plan between the University of Cincinnati and the manufacturers of that city, by which engineering students who are accepted by the manufacturers are enrolled also in the university, and regularly indentured for a six-year course, in which shop and school are closely coordinated.[2] During college term they spend alternate weeks in school and shop, and when college is closed they work regularly in the shops. They are paid for their work in the shops at rates which total about $2,000 for the six years. Though spending only half the time at the university that is spent by those taking the regular 4-year engineering course, the apprentice students did three-quarters of the work done by the latter, with grades 25 per cent better. This system for training industrial leaders is, so far as it has gone, a success.

To the extension of such cooperative systems between public schools and shops, trade unionism offers strenuous objection. In the report of the special committee on industrial education of the American Federation of Labor, the following statements are found as to this system:[3]

> The manufacturer is not obliged to take any boy or to keep any boy. On the other hand, the high school is obliged to educate all duly qualified boys, to give them all that the city provides. * * * The people have no hand in this plan. * * * Under this plan the veto power over the boy's right to public industrial education is in the hands of the manufacturer.

The committee points out that a manufacturer could refuse to take or keep a boy who should take a definite stand for trade unionism or whose father should have done the same; that the cooperation would so bind the hands of the teachers that they could offer but little resistance to inculcation by the employer of antiunion principles, and that a spirit of undemocratic exclusiveness would be apt to arise among the accepted boys against their excluded fellows. To sum up, they state that:

> Any scheme of education which depends for its carrying out on a private group, subject to no public control, leaves unsolved the fundamental democratic problem of giving the boys of the country an equal opportunity and the citizens the power to criticize and reform their educational machinery.

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[1] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, p. 115. [2] Wright, pp. 54ff.
[3] Amer. Fed. of Labor Report, pp. 11, 12.

These objections must be borne in mind, but it seems as if no scheme for training our future workers wholly or in part in the shops could be made independent of the selection of those trained by the employer. The conclusion would seem to be that, if the cooperative system for industrial training increases in extent, other means of industrial training should be also kept open to our boys.

Despite recent increases in the number of public technical and trade schools, private schools, which are first in the field, are still the more numerous and exercise the greater influence on the industrial situation. Of these the New York Trade School, founded in 1880, was first in offering short trade courses in the building trades, taking day students about four months for completion; while the Baron de Hirsch School, also in New York City and founded in 1891 for Hebrews, offers short day courses of five and one-half months, leading to the position of helper. In San Francisco, the Wilmerding School of Industrial Art for Boys, established in 1900, offers four-year courses in the building trades, with the practical side to the fore and occupying the entire last two years. Other schools privately endowed like the above exist in small numbers and offer courses varying in length from the short four or five months' courses to those lasting several years. The latter include generally a modicum of general academic training and a larger share of technical work. Some, as the Manhattan Trade School for Girls, are exclusively for girls.

In very recent years States and cities have taken up the establishment of trade schools[1] and founded the following: State trade schools, at New Britain and Bridgeport, Conn.; the Worcester Trade School, Worcester, Mass.; the Wisconsin State Mining Trade School, at Platteville, Wis.; Saunders' School of Trades, Yonkers, N. Y.; the Portland School of Trades, Portland, Oreg.; the Philadelphia Trades School; the Columbus Trades School, Columbus, Ohio; the Milwaukee School of Trades for Boys; the Girls' Trade School, of Boston, Mass.; the New York Trade School for Girls, Syracuse, N. Y.; and the Milwaukee School of Trades for Girls. These schools do not differ materially from the privately endowed schools whose example they follow. A number of private trade schools run for profit are also in the field, offering generally very short courses of three or four months. This type of school assumes to train journeymen, and meets the most determined opposition of the trade-unions.

A similar group of day technical schools, mostly private, ministers to a more general need.[2] There is much ambiguity in the use of the terms "industrial" and "technical" as applied to schools, and they are often used interchangeably. Industrial schools are in the broadest sense any and all schools which have a function or purpose

[1] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, pp. 22–51; and 25th An. Rep. Commis. of Labor, 1910, Indus. Educ., pp. 91–141.

[2] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, pp. 52–72.

directly related to industry; in the narrower sense they are those schools which train in the general aspects or bases of industry, as drawing, mechanics, and applied mathematics, but do not specialize their training to the extent of teaching specific trades. Technical schools are those which instruct in the technic of industry in general or of special industries, particularly the latter. Thus a polytechnic school is one which concerns itself with the special technics of a number of industries. A technical school aims to teach the science as distinguished from the art of a trade or industry. It aims primarily to show the student the meaning of the processes studied rather than to train him to dexterity in their execution. Many schools are part technical, part trade schools, but the functions are more or less distinct. No school is a trade school proper which fails to teach the pupils to perform the actual processes of the trade, and merely makes clear to them the meaning of those processes.[1] Thus a trade school is primarily concerned with the art as distinguished from the science of a trade or industry. A trade school need not attempt to take the place of an apprenticeship.[2] The textile schools, established in Massachusetts under State law of 1895 and elsewhere are technical and not trade schools, and expect practical experience in their pupils, either before or accompanying their school work.

Since 1906 a new type of school has arisen rapidly. This is the general industrial preparatory trade or vocational school, of which there were 12 in 1910, all public,[3] 9 of them founded in 1909, and 8 in New York State. These schools aim to attract and retain in school for two or three years those pupils who would otherwise leave at the completion of the common-school grades or before, to turn their attention toward the opportunities offered in the manual trades and to furnish such basic industrial training as will provide industrial intelligence and make for rapid advancement in subsequent apprenticeship. The work is usually about equally divided between classroom and shop and becomes more specialized toward the end of the course. It is this class of school which was strongly desired by both employers and employees, according to the New York report quoted above.

Such schools would aim to instruct their pupils in the elements of both theory and practice of those processes fundamental or common to a group of trades. Such groups of trades or industries (or workers), important in the United States, are: (1) Woodworking industries; (2) iron and steel working industries; (3) bookbinding and pasting trades; (4) printers' trades; (5) leather-working industries; (6) textile industries (factory type); (7) clothing trades; (8) engineers and firemen (and representing "less evident possibilities of approach for

[1] See preface, p. 7.

[2] An opposing view is presented in 25th An. Rep. Com. Labor, p. 15.

[3] Nat. Soc. Indus. Educ., Bull. No. 11, pp. 8-22.

the intermediate industrial school"); (9) stone-working industries; (10) clay and glass industries (using furnaces); (11) paint, paper, and plaster industries; (12) food manufacturing industries; (13) tobacco industries; and (14) miners and quarrymen.[1] The existing schools of this type have naturally tended to specialize their efforts to meet the needs of industries locally important.[2] This will doubtless continue to be done, as there will be neither need nor usually means for such a school to train in all of the groups of trades mentioned above, or similar ones.

More important than any of these types of schools in their present influence on the industrial situation, whatever the future may bring, are the numerous evening schools.[3] These are of many kinds, public, privately owned, and profit seeking, and both technical and trade schools or a combination of the two. Most of the day trade and technical schools, such as those above referred to, also give evening trade or technical courses or both. These courses are in part improvement courses, in that they are largely attended by those already engaged in the trades, and desiring either to supplement their practical shop experience with some scientific knowledge of the technic of their industry or to add a general shop training to the narrower training on a single machine, or in a single department, that has been theirs. Evening schools are subject to the serious limitations that the students are tired from the day's work, and that any thorough course must occupy a long period, as several years, and few persevere through a long course.[4] Prof. Sadler, who is thoroughly conversant with the numerous evening schools of England, says that about half of the students attend only about half of the time. Notwithstanding, evening schools are in great demand; and for short trade and technical courses, chiefly to supplement some knowledge already obtained of a trade, they have a great and largely unoccupied field of usefulness before them. Prof. Richards, director of Cooper Union, states that "in Europe evening schools are the main instrument of industrial education."

Deserving special mention among evening schools are the classes in the many branches of the Young Men's Christian Association. According to the Department of Commerce and Labor, there were

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[1] Nat. Educ. Assoc. Com. Rep., pp. 65–68.

[2] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, pp. 8–22.

[3] Ibid., pp. 81–111; 25th An. Rep., pp. 211–245.

[4] John L. Shearer, president of the Ohio Mechanics Institute at Cincinnati, voices thus strongly a general view of those who know the facts: "For moral reasons I can not sanction the establishment of departments in our public schools which make it optional for a child to attend either in the daytime or in the evening. The temptation becomes too great to utilize the child's ability for commercial purposes, and the consequences of this irregular training become a serious burden upon the public in later years. I have not found that evening classes for children are productive of good results, but rather leave in their train many serious evils. This brings me then to what I consider the legitimate sphere of the night school. It should be a good school for adults and not for children."—Rep. Wisconsin Commis. on Indus. and Agric. Training, 1, p. 48.

in 1902, 6,000 men and boys enrolled in their classes; while in 1910 there were 50,000 employed men and boys receiving instruction under 2,250 paid teachers, two nights a week for half the year, in 140 different commercial and vocational subjects.[1] The students bear in membership and tuition fees, a part of the cost of instruction. The technical courses are such as mechanical, architectural, and freehand drawing, physics, chemistry, electricity, plan reading and estimating, concrete and steel engineering; while the trades taught include among others carpentry, pattern work, forging, and tool making, machine shop practice, and plumbing.

Closely akin to the evening schools, and to be classed with them as performing the same function so far as the technical aspect is concerned, are the correspondence school courses which have attained such wide publicity in recent years.[2]

One of the chief of these states that its purpose is to teach the theory of engineering and of trades to those actually at work in those activities, and the other schools perform a similar function. They are thus distinctly technical schools. They are usually private, profit-making enterprises. In two leading correspondence schools the tuition fees vary from $20 for the shorter to $120 for the longer courses. So great has been the demand for their services, not only in places where there were no other technical schools, but where these were available, that one of them had enrolled 300,000 students, in 1902, and had enrolled up to 1910 a total of over 1,300,000. The method of these schools, though ridiculed at first, has proven to be quite effective. Much of its success has been due to the division of all subjects into short lessons, stated in simple, explicit language, and illustrated whenever necessary, forming each a unit by itself, and containing what is necessary to understand the next lesson, and no more. Competent instructors correct all written and drawn work, and give special attention to those who need it. Where the number of students permits it, traveling instructors now meet the students in a locality for an hour every week or every two weeks. To complete the longer courses usually requires five or six years, but graduation is not so urgent as in most schools, because the student is, as a rule, working at his trade while studying. The Union Pacific educational bureau for information has since 1909 supplied expert tuition without cost to its employees by mail. Trade-unions approve of this type of school, as they do of all schools designed to increase the efficiency of those already in trades, as distinguished from those which increase or which they think increase the number entering the trades.

Industrial schools for girls are not numerous, and are mostly private philanthropic institutions. Their work usually includes

[1] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, p. 101.

[2] 17th An. Rep. Com. Labor, pp. 223–234; 25th An. Rep. Com. Labor, pp. 349–360.

domestic science, whose purpose is oftener to prepare for housekeeping than for wage earning. The distinctly trade courses are almost entirely limited to dressmaking and millinery[1] showing often a lack of study of vocational opportunities open to girls and women.

Having now completed our brief survey of existing schools, let us glance for a moment at the tendencies of recent State legislation with regard to industrial education of various sorts.[2] Massachusetts, New York, and Connecticut have enacted laws providing State aid to free public industrial or trade schools; New Jersey has legislated for State aid for free privately established schools; and Wisconsin allows cities to establish trade and industrial schools at their own expense. These States are in the lead in respect to industrial education legislation, but a variety of other legislation in other States has been passed in very recent years. Thus, according to Bulletin No. 12 of the National Society for the Promotion of Industrial Education, the following State legislation is now in effect, covering the field of free public secondary industrial education of a practical type, as distinguished from a cultural:[3]

States legislating on and giving aid to industrial education.

	Number of States.	States giving aid.
States not legislating with respect to some type or types of practical activities	19	6
States legislating with respect to practical activities	29	16
States providing for technical high schools	10	1
Providing for manual training	18	9
Providing for training in domestic economy	11	11
Providing for agricultural training	19	13
Providing for industrial and trade training	11	8
Providing for all the practical activities	3	2

So recent is the bulk of this legislation that it can be said: "The first State subsidy for agricultural or trade training of secondary grade of any significance was not granted until after the close of the last century."[4] Some of this legislation is in advance of its utilization by the localities. The authors of the bulletin above referred to declare:

> The further development of public vocational education would seem to be dependent in large measure upon legislation providing for State initiative, State subsidy and a reasonable degree of State control.[5]

One item of recent legislation would seem to call for note and that is the Ohio compulsory attendance law of 1910 for part-time schools. The part of the general compulsory attendance law which deals

[1] 25th An. Rep., p. 263.

[2] Nat. Soc. Promot. Indus. Educ., Bull. No. 12, Legislation upon Indus. Educ. in U. S.; texts of the recent laws are found in 25th An. Rep., pp. 499–518.

[3] Nat. Soc. Promot. Indus. Educ., Bull. No. 12, pp. 24ff.

[4] Ibid., p. 26.

[5] Ibid., p. 27.

with this feature declares that, in school districts where part-time classes are provided for the instruction of youths over 14 who are engaged in regular employment, a new obligation to attend such schools for not over eight hours a week in the daytime (between 8 a. m. and 5 p. m.) during school term is imposed on all youths under 16 who have not satisfactorily completed the eighth grade of the elementary schools, until they shall have completed the eighth grade or have reached their seventeenth birthday.[1] The success of this new experiment, and the way different classes receive it, will be watched with much interest.

Superior in scope even to the Ohio law is the Wisconsin compulsory improvement school law of 1911, according to which boys and girls between 14 and 16 who are working under legal permit must attend an improvement or other school established for the purpose, wherever such school exists, for five hours a week and six months in the year. Employers must release their youthful workers so obligated for a number of hours equal to the hours of compulsory school attendance. This law, based on German experience, is of the type recommended in this study. It is but an opening wedge, for the compulsion is dependent on the action of the locality in establishing the proper school, and extends only till the child is 16 years old. Notwithstanding these limitations, inherent in any pioneer law of this sort, the act marks Wisconsin as the State which at present leads the van in the movement for really popular industrial education.[2]

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[1] Nat. Soc. Promot. Indus. Educ., Bull. No. 12, p. 35.

[2] See Appendix B. The Wisconsin Apprentice Law of 1911. The text of the compulsory improvement school law is reproduced at the close of this appendix. The apprentice law and the school law should be studied in conjunction with each other.

CHAPTER IV.

RESULTS AND OMISSIONS OF OUR INDUSTRIAL EDUCATION.

What are the net results of our present industrial education agencies to date? In number of students raised in proficiency the results are small for a country so large as ours. In quality of work some institutions have done very well. The following are concrete results in terms of positions and wages: The income received during five years by apprentices of the North End Union School of Printing, above referred to, is $2,800. Subtracting the $100 for tuition the first year, the net amount is $420 greater than that earned during the same period by a boy taking a regular shop apprenticeship with no trade schooling.[1] The graduates of the Baron de Hirsch Trade School of New York City, with short trade courses of about five and one-half months, increase their earning capacity by the course from an average of $5.39 to an average of $7.54 a week, and usually reach journeyman grade in two or three years.[2] The Manhattan Trade School for Girls, with courses of about one year, sends out girls who earn from $3 to $8 a week at once and $4 to $12 a week after two to four years in their trades, with a few operators reaching $25.[3] The graduates of the Philadelphia Trades School, with a three years' course, begin work at an average wage of $9.50 a week.[4] Of the Williamson Free School for Mechanical Trades, all the graduates to date, 726 in number, are in the trades which 95 per cent of the graduates enter at once at 60 to 100 per cent of full journeyman's pay.[5] About half of the graduates of the Wilmerding School for Industrial Arts for Boys, in San Francisco, have been accepted on the completion of their four years' course as full journeymen, while others have received two to three years' credit toward the completion of an apprenticeship.[6]

Concerning technical schools, the earnings of older graduates of the Hebrew Technical Institute of New York City are $60 a week,[7] while the graduates of the California School of Mechanical Arts are given credit for two to four years of apprenticeship and advance rapidly.[8] The Massachusetts commission's report shows that in the machine trades shop-trained boys rise from $4 to $12 a week by the time they

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[1] Wright, pp. 57–60.
[2] Nat. Soc. Promot. Indus. Educ., Bull. No. 11, p. 41.
[3] Ibid., p. 49.
[4] Ibid., p. 29.
[5] Ibid., p. 45.
[6] Ibid., p. 35.
[7] Ibid., p. 65.
[8] Ibid., p. 60.

are 25 years old, while boys trained in technical schools rise from $10 to $30 a week.[1]

The above facts are presented here as indications, but not as proofs in any exact sense, of what these schools have accomplished. They show that such schools can accomplish and have accomplished useful results, and specifically that trade schools can considerably shorten the necessary period of apprenticeship and make for superior ability. From the other types of schools increased efficiency and promotion have come in a great number of cases. And yet the schools are so few, the need so great, that public initiative is urgently demanded. Our provision for industrial education in this country is still mainly private and may be summed up as good, though not ideal, means for training industrial leaders with almost no industrial training for the rank and file.

What, in brief, can we legitimately and reasonably expect that industrial education will do for our workers, for our industries, and for the whole people? In a few, and perhaps an increasing number of cases, we can expect higher skill and better products to result than had before existed. Such results are most likely in the broad field of art and design in industry. The main direct result of widely extended industrial education will be the wide diffusion of industrial intelligence, more or less general in its nature, and of specialized skill in a great variety of lines. That the proper types of schools can impart these qualities has been proved both in the United States and abroad. This industrial intelligence and specialized skill can hardly be expected, in the near future at least, to surpass in quality that now found in our midst; the gain will be rather in quantity. A larger number and proportion of our industrial population than at present will be skilled workers.

But can places be found for this multitude of skilled workers? Will not many of them, with the training and outlook of skilled men and women, be forced to labor at work below their abilities? Are not the relative needs of industry for skilled and for unskilled workers, as well as for different grades of skilled workers, fixed? And does not this limitation of the needs of industry for skilled workers doom a large portion of our population (substantially as at present) to unskilled or relatively unskilled positions throughout their lives? In recent years especially the demands of industry seem to be for many unskilled (or but slightly or very narrowly skilled) and for a few only of thoroughly skilled workers. If this limitation were rigid, our efforts along the line of strictly industrial education should be limited to the training of only enough workers to fill the skilled positions, each with a grade of skill limited to the possibilities of his posi-

[1] Rep. of Mass. Com. on Indus. and Tech. Educ., Apr., 1906, pp. 67–69.

tion. The situation is, however, more hopeful than this. Many unskilled or slightly skilled workers are now demanded by industry chiefly because their labor is cheap, while our manufacturers would gladly employ more skilled workers could they secure them. For the country as a whole, their numbers are at a given time fixed. Individual employers can secure more skilled workers only by paying rates of wages which often they can not afford. If, then, industrial education becomes general in the United States, the increase in the number and proportion of skilled workers available will force a readjustment of industries by the mere fact that such a readjustment will become profitable to employers. They will find it worth their while to contract the number of unskilled workers whom they employ and to increase the number of skilled workers. To the individual employer the motive for this change will be pecuniary; he will have to pay relatively more than before for unskilled labor, less than before for skilled. Further, there are some who hold that, aside from the cost of labor, the modern industrial army of few captains and many privates will undergo a transformation and that many skilled workers of various grades—the noncommissioned officers of the army—will come to be demanded. Such an increase in skill required of many of its workers has accompanied the modern tendency toward intensive cultivation in agriculture. It may yet open broad opportunities for the average man in industry.

With the probability then of increased opportunity for skilled workers, what advantage will those workers derive who now have to enter unskilled work, but who, with large opportunities for industrial training, can become skilled workers? We may confidently expect that increased opportunities for industrial education of the right kinds will raise the real wage of vast numbers of our people and greatly increase the sum of well-being in the country. All classes will benefit, directly or indirectly, by these educational opportunities. It is a corollary of modern economics that it is well for a man or for a group to have prosperous neighbors rather than poor. Employers will benefit by a larger supply of skilled labor, thus increasing their ability to compete with foreign producers both at home and abroad, and enlarging their home market as a result of cheaper products.

Chief among the defects of our present industrial schools are their defects of omission. A large and important field is all but unoccupied by them. In 1905 a report was made by the Commission on Industrial and Technical Education of Massachusetts which revealed a striking condition of the working children of the State, both boys and girls, which is probably largely true also of other highly industrialized States.[1] About five-sixths of the children, it is found, leave school during the seventh and eighth grades to take up industrial

[1] Rep. Mass. Commiss. on Indus. and Tech. Educ., 1906, pp. 85–93.

pursuits.[1] These children, about 25,000 in number, of the ages of 14 and 15, go for the most part into industries of the lower grade, which, indeed, are almost the only ones open to them. To quote from the report, "33 per cent of the children of this State who begin work between 14 and 16 are employed in unskilled industries, and 65 per cent in low-grade industries, thus a little less than 2 per cent are in high-grade industries." The low-grade skilled industries in which child labor is much used are less desirable also than those where it is not. The class of family seems to have little to do with the trade or industry into which the child enters, nor is the industry much affected by family connections, except in the cases of a few desirable apprenticeships. "All grades of families are represented by their children in all grades of industries."

The employers in practically all real trades that offer a future do not want the boy or girl until he or she is 16 years old at least, and in many cases not until he is 18. This evidence is confirmed by the New York report above referred to, as well as by other sources. Trade unions, in most cases, do not impose a higher age limit for apprentices than is acceptable to employers; in fact, the union minimum is usually below what the employer will accept for those industries where a bona fide apprenticeship holds. In most of the industries into which Massachusetts children of 14 and 15 go, however, there is no apprenticeship system, but merely child labor. Not only is it very hard for a child below 16 to obtain employment in one of the better industries, but the beginning wage in these industries is so low that few children will accept it, even when they may. The low-grade industries pay more at first, but reach their maximum in three or four years as a rule, and thereafter offer no chance for advancement for any not specially trained. This maximum averages from $7 to $8

[1] The high proportion of pupils leaving school for all causes is best stated by the following figures from cities throughout the country contained in U. S Bu. of Educ. Bull., 1911, No. 5: Age and Grade Census of Schools and Colleges, by George D. Strayer, from which the following figures are quoted (pp. 135–136): Median per cent of the largest age group (assumed to equal the number of pupils entering all grades each year) found in each grade (data obtained December, 1908, from 317 cities):

Grades of pupils.	Cities of over 25,000.		Cities of less than 25,000.	
	Boys.	Girls.	Boys.	Girls.
Seventh year	(55) 65	75	70	70
Eighth year	(42) 50	60	50	60
Ninth year	47	50	47	45
First year high school	35	45	40	50
Fourth year high school	10	16	12	20

Studies by graduate students in Teachers College, Columbia University, as quoted in the above report, show that a fair estimate of the number of repeaters would be 10 per cent of the total number in the seventh, and 8 per cent in the eighth grade. The figures above in parentheses represent for two cases the estimated actual number of pupils entering the given grades. On the whole, these figures confirm those of the Massachusetts report, though indicating that the country as a whole keeps its children longer in its schools than the Massachusetts cities studied.

a week, with $9 to $10 as the upper limit. The training offered the child in these low-grade industries, in which seven-eighths of the children below 16 work, is negligible, and from the standpoint of their development the years can be called, as they are called in the report, "wasted years." The net weekly contribution of the child to the family through this work, above car fare, clothes, etc., is estimated to average but little over $1.50. The boy or girl who does not start work till 16, though commencing at a lower wage, is able to reach the wage of his fellow of the same age who started at 14 in two years and has probably earned a total to equal that of him who had the start in four years. The younger children change frequently from mill to mill, and once having left the public school are not to be tempted back by any attractions now offered there, but rather drift around aimlessly.

The gain thus of this early work is negligible in training and but very slight in money. Yet the families, in most cases, are not so poor that necessity drives them to set their children to work at the earliest opportunity. The experts of the commission estimate that 76 per cent of the 3,157 families investigated would be able to give their children the advantages of industrial education if persuaded of its advantage. Industry has shown that it does not greatly desire the children so young, as indicated by the meager wage and opportunities it offers. The children are not mature enough to undertake any responsible work; these are the years best suited for the training of the child, and education at this time along lines that relate closely to the child's future will richly pay for itself in the future both in money and in efficiency. The testimony of the investigation from the evidence of case after case is that, except among the poorer foreign families, the child insisted on leaving the school, the parents objected, but the child had its way. What then draws the child, with so uniform and powerful a force, from school to mill? It is his awakened activity, tired of the conventionality, the unreality of the schoolroom; eager to see more of the world, to live in the active life of the world, to stand on his own feet and earn money by his own activity; to live less in terms of words and books, and more in terms of things and men.

Where does the responsibility for this condition lie and where the remedy? In the schools. The schools fail to hold the child even when his work is worth little to himself or others, because they have even less to offer that in any way attracts him. Of 35 or 40 school superintendents interviewed throughout the State, all but three thought that the fault was in the school system. Would industrial schools succeed any better? All experience so far indicates that they would, if there was enough of the practical and vocational about

them to arouse the child's interest, and a promise of a better opportunity in the world of industry to stimulate his imagination and diligence. The results of the Massachusetts report have opened the eyes of many to the likelihood that the child is likewise limited in other States also.[1] The need for industrial schools to redeem these "wasted years" and make them fruitful is imperative. Industry is conspiring with educational forces to make the present position less and less tenable, for some of the industries now employing children—notably the woolen industry (classed as low-grade skilled)—are dispensing more and more with their services. The result is that young children are being forced more and more into juvenile employments and into the lower-grade industries, "blind-alley" employments which offer no future. Before 14 the child's productive capacity is negligible, and between 14 and 16 it is capable of only the simplest processes. The need indicated is for preparatory trade or vocational schools, which shall teach children between the ages of 14 and 16 the elements of practical handling of tools and industrial materials, and of the principles underlying industries, each student specializing in a certain type or group, as metal working, wood working, etc. This type of school is what is called the general industrial, preparatory, trade, or vocational, and is the type so strongly approved of by both employers and unions in New York State.

Another important investigation has recently been made under the direction of the United States Commissioner of Labor, entitled "Conditions under Which Children Leave School to Go to Work."[2] A survey of the main conclusions of this report will support the data and conclusions of the Massachusetts report and show further need of industrial education, as well as for vocational guidance, for the boys and girls affected.

An intensive study was made of 622 children (below 16 years old) who had left school and gone to work in seven different typical smaller cities in Rhode Island, Pennsylvania, South Carolina, and Georgia. More of the children left school at 14 years of age than at any other age (281 out of 620), the next largest number at 13 years (151), then came 15 years (81), 12 years (53), and lesser ages.[3] The following table summarizes the causes for leaving school by the children.[4] Generally, several causes cooperated to this result. In such case the predominant cause only was given.

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[1] "The report of the Wisconsin Bureau of Labor for 1910 shows that only 12 per cent of the children are in positions to learn a trade. These, our report says, are in the building trades, millinery, dressmaking, trunkmaking, and tinning." In some of these, probably, "only a slight division of a trade can be learned."—Rept. of Wisconsin Commiss. on Indus. and Agric. Training, 1911, p. 40.

[2] Vol. VII, 1910 (61st Cong., 2d sess., S. Doc. No. 645), of Report on Conditions of Woman and Child Wage Earners in the United States, in 19 volumes.

[3] Ibid., p. 35.

[4] Ibid., p. 46.

Causes for children leaving school to go to work.

Causes for leaving school.	Number of children.	Per cent.
Necessity:		
Earnings necessary to family support	169	
Help needed at home	6	
Self-support necessary	11	
Total	186	30.0
Child's help desired, though not necessary:		
In family support	140	
To buy property	12	
In home work	14	
To earn money for education of self or relative	7	
Total	173	27.9
Child's dissatisfaction with school:		
Tired of school	35	
Disliked school (general manner of life there)	54	
Disliked teacher	31	
Disliked to study	16	
Could not learn	10	
Not promoted	5	
Too big for class	14	
Total	165	26.6
Child's preference for work:		
Work preferred to school	44	
Spending money wanted	8	
Association desired with friends who worked	9	
Total	61	9.8
Other causes:		
Ill health	16	
To learn a trade or business	6	
Company pressure (exerted on parents)	7	
Other (specified in detail in original table)	6	
Total	35	5.7
Grand total	620	100.0

In cases classed under necessity the existence or absence of necessity was decided by the investigators on the basis of statements made by the family concerned, as to their finances. Usually it was considered that families having a per capita weekly income, after rent was paid and expenses for sickness and death met, of less than $1.50 a week without the earnings of children under 16, could not unassisted keep their children in school; but that families with a per capita income of $2 or more, after similar deductions, were able to do so. Those with per capita incomes of $1.50 to $2 as above were on the doubtful line, where the degree of thrift decided whether the child's earnings were necessary or not.[1] For all the cases where necessity was the chief reason for leaving school for work, trade or other industrial schools requiring attendance through the day are inapplicable. For these, as for other children at work, improvement schools of the type so widely found in Germany and recently initiated in Cincinnati and Boston might be adopted.

Those families desiring the help of the child, though that help was not strictly necessary, generally regarded work as a child's normal and natural occupation, and were indifferent to school attendance

[1] Vol. VII, 1910 (61st Cong., 2d sess., S. Doc. No. 645), of Report on Conditions of Woman and Child Wage Earners in the United States in 19 volumes, pp. 29, 30.

(sometimes hostile).[1] The chief need shown here was for more popular awakening to the importance and benefits of education.

Those cases classed under dissatisfaction with school and preference for work show that the schools, as they are, do not interest a large class of children as much as does industrial work.[2] Of those stated as preferring work—

> in most cases it was a real liking for work, rather than for its attendant circumstances, which accounted for their leaving school. For the most part these children did not dislike school; in fact many of them distinctly liked it, only they liked work better.[3]

Of all the children, 51.1 per cent were satisfied with school and teacher, 48.9 per cent not so.[4] Even 39.5 per cent of the pupils classified as bright by their teachers were dissatisfied.[5] That the schools do not provide opportunity to bring out by any means the full capacities of the children is shown by the higher average estimates of their general capacity by their employers than by their teachers. Thus in a classification of all as bright, average, or dull, the teachers classify but 26.1 per cent as bright, the employers 49.4 per cent; while the teachers class 26.1 per cent as dull, the employers but 7.8 per cent.[6]

Would manual or preparatory industrial training in the common schools (the only ones treated in the report) tend to increase the interest of the pupils in their work and hold them longer in school? Answers to this question had to be secured generally from parents and were thus their opinion as to their children's views. They thought in 24.5 per cent of the cases that such training would have increased the desire of their children to stay in school. Columbus, Ga., one of the seven cities investigated, has excellent manual training work and two special industrial schools. There was in Columbus less dissatisfaction by the children in the schools than elsewhere, which would seem to be due to these industrial features did not Columbia, S. C., with no manual or industrial training, have almost as good a record.[7]

Most of the children studied entered unskilled industries, while but few entered trades. But little real choice was exercised by most (88.7 per cent), as follows:[8]

Worked for parents or relatives or at home	29
Took first place offered	313
Went where friends or relatives worked	192
Took something near home	16
Total (88.7 per cent)	550

[1] Vol. VII, 1910 (61st Cong., 2d sess., S. Doc. No. 645), of Report on Conditions of Woman and Child Wage Earners in the United States, in 19 volumes, pp. 50–52.
[2] Ibid., pp. 52–55.
[3] Ibid., p. 55.
[4] Ibid., p. 110.
[5] Ibid., p. 120.
[6] Ibid., pp. 122, 123.
[7] Ibid., pp. 108, 110–112.
[8] Ibid., p. 183.

For the remainder, the reasons were as follows:

Wanted to learn trade or skilled occupation	27
Attracted by high wages	11
Attracted by desirable work	31
Set up in grocery business by father	1
Total (11.3 per cent)	70

"Practically 90 per cent of the boys and all of the girls entered industries whose average weekly wage for all employees is under $10."[1] Though most who entered trades did so by aid of friends or relatives in the trade, there are indications that such aid was chiefly of value in opening the children's eyes to the trade opportunity. Without such special information, nothing awakens the child to the desirability of an occupation promising a future; so he drifts into the first position handy.[2] This suggests a service which manual training or elementary prevocational training in common schools, as well as intermediate industrial schools, can render—the awakening of the child to an industrial intelligence which shall, among other results, aid him to select intelligently and enter a vocation which promises a future if that be possible with his family's means.

Purposeful planning or definite ambition existed in the minds of "barely half of the boys and less than half of the girls."[3] Often where such ambition existed the work being done at the time bore no manner of relation to this ambition and furthered it not one whit.[4] A much larger percentage of those who had completed half or more of the school course had definite ambitions for their work than of those who had not gone so far. Since the correlation between age and grade is low, this seems to show "that the schools have had considerable effect in giving the pupils a definite aim in life."[5] Finally, 167 boys (47.3 per cent) and 108 girls (40.2 per cent) said that if an evening trade school were opened they would wish to go.[6] Can not these cities, and others, afford to give the children the opportunity they need and wish?

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[1] Vol. VII, 1910 (61st Cong., 2d sess., S. Doc. No. 645), of Report on Conditions of Woman and Child Wage Earners in the United States, in 19 volumes, pp. 151, 152.

[2] Ibid., pp. 186, 187.

[3] Ibid., p. 190.

[4] Ibid., p. 189.

[5] Ibid., pp. 190, 191.

[6] Ibid., p. 192.

PART II. GERMANY.

CHAPTER V.

THE BACKGROUND OF THE INDUSTRIAL SCHOOLS.

To understand aright the very successful experiments of Germany in the field of industrial education, some consideration of the nation's industrial background is necessary.[1] Germany has developed very slowly, both in political integration and in industrial improvement. In fact, surprising as it may seem, the greater part of Germany's industrial advances have been made since her final integration into a nation in 1871. While England was leading the world in industrial and commercial advances Germany was lying dormant, unfavored in position, with a naturally poor soil, surrounded by enemies, and with a very conservative population, chiefly agricultural. Long after England had passed through the first and most violent stages of the industrial revolution, and the other countries of western Europe were in the midst of the great changes, Germany awoke from her lethargy and slowly began, under the stern force of necessity, to develop her industries and to give less relative attention to agriculture and more to manufacturing, transportation, and commerce. In one respect the country's slowness of development was an advantage, for the terrible waste of human life and health which accompanied the industrial revolution in England was almost unknown in Germany. Very slowly did Germany, borrowing the tools and ideas of her rivals, or learning them by stealth, develop modern factory industries. Yet the lack of national unity was a great drawback. Not until the tariff union (Zollverein) was formed in 1835 were the first barriers broken down, while the German nation was not able to stand forth as a unity till the fateful days of 1871. Since then German industries, fostered by a strong and paternalistic Government, aided by the best that science can bring and by a fine system of industrial education, conducted by a people hardy, diligent, faithful, subservient to discipline, and inspired by public spirit, have grown in size and strength until Germany is to-day one of the leading manufacturing and export nations of the world.

[1] See Howard: Cause and Extent of the Recent Industrial Progress in Germany; and Spec. Consular Reps., vol. 33, Indus. Educ. and Indus. Conditions in Germany, 1905.

In giving credit to the various factors which are jointly responsible for Germany's industrial successes, the qualities of her eminently industrial people and the stern necessities of her situation should have first place. Germany had few of the natural advantages in which the United States is so rich; her population was among the densest in Europe, and constantly increasing, with no outlet in colonies, and whatever markets she won must be won from rivals first in the field, and, at the start, better equipped than she. It became increasingly apparent as the nineteenth century grew older that Germany's farms could not long support her population. She must import foodstuffs, and to this end must become a manufacturing nation. The present Kaiser sounded the watchword for the country when he declared: "The future of the German nation lies on the seas." The German people realized this, and have steadfastly kept their faces turned toward their foreign markets, and to the many factories where all manner of goods are made, to be consumed from Bremen to Peking.

Other factors in Germany's industrial and commercial success are those which flow from the persistence and thoroughness, typical of the race. The Germans have realized that theirs was not a situation to be dealt with by careless methods, and that the closest mental application was necessary to solve the hard problems before the country. Fichte was largely instrumental in starting the nation, after the defeats by France at the beginning of the nineteenth century, in the paths of careful and scientific investigation and education. The nation followed his methods and has progressed by taking thought. Joined to this general thoroughness is a degree of cooperation for the common interests, through the centralized Government and otherwise, from which much better results can be expected and have actually been obtained than is possible with less centralization. This is evident, for example, in the influence of Government and of guilds on the industrial schools. Finally, the German nation follows the lead of science in her industries and relates science to industry in a marked degree.

Along with Germany's very rapid progress in the past few decades there are aspects of her development not nearly as progressive. Her agriculture, on the whole, is backward, while the whole country suffers from overpopulation and the low plane of living accompanying it. The position of the average worker is a humble one, with little opportunity to rise. The idea of "Stand," that is, business, or more broadly, social position, is a fundamental one in the German thinking.[1] A man has a place in life of which birth is the chief determinant. He is expected to, and he usually does, both conform fairly closely to the type for that Stand and fail to change to another Stand. The medi-

[1] Howard, pp. 94 ff.

eval idea of labor and enterprise not for profits but for livelihood (according to the requirements of the individual's Stand), still persists and conspires with the difficulty, or nigh impossibility for the great majority, of obtaining a surplus revenue over present needs, to preserve the status quo. On the other hand, the various industrial insurance funds, a better administered poor relief, industrial education, an industrial law well executed, which protects the worker in many ways, combine to make the maintenance of a worker's Stand and plane of living surer than in our country. One of the antecedents of the German system of education, especially industrial education, which must be kept in mind, is that a man's Stand, once chosen and fairly started on, can not be as easily changed as in the United States, if at all. If one fails at his chosen business, he fails in life, as there is much less opportunity than with us to change his vocation. This idea both fosters and is fostered by the practice of educating for a special business, whether it be cobbler or diplomat, which is more universally observed than is usual in the United States.

Compulsory military service is a factor in German industries of no mean importance. Requiring of all men, with but few exceptions, two years of service (three if in the cavalry) after reaching the age of 20 years, it affects practically the entire male population.[1] However much of evil this service may involve, in tax burdens and in taking two of the best years of each man's life, German opinion holds strongly to the view that it benefits the country's industries. It is claimed that it strengthens the physique, accustoms to cleanliness, order, and discipline, and makes for self respect.[2] It has other results which are to the American mind not so desirable. It tends to overemphasize subordination and to subdue excessively the initiative and personality of the worker.

The industries[3] of the country are classified under two main heads—factories (or large industries) and handwork (or little industries). A common national industrial law[4] (Reichs Gewerbe-Ordnung, or Gewerbe-Ordnung) governs all industries, while under its terms and within the limits it sets lesser laws and regulations apply to any particular industry. Much of this national industrial law applies to all industry, while the conflict of years between the two types of industry has resulted in special provisions of the law for each. This industrial law gives no definition of factory nor of handwork, and an official of the Prussian ministry for commerce and industry[5] told me that the

[1] University students are free from the requirement; those who pass successfully six years work in Gynasium, Realschule, or equivalent school, receive the coveted certificate commuting the service to one year (as a so-called "volunteer," with special privileges); there are other lesser exceptions.

[2] U. S. Spec. Consular Reps., vol. 33, Indus. Educ. and Indus. Conditions in Germany, pp. 271, 272.

[3] Industries proper, not including agriculture.

[4] Reichs Gewerbe-Ordnung (R. G. O.), as in edition edited and annotated by Dr. Hoffman, pub. by Carl Heymann's Verlag, Berlin, 1911.

[5] Königliche Preussischen Ministerium für Handel und Gewerbe.

ministry is as yet unsuccessfully seeking to define certain industries as factory industries and certain as handwork. The difficulty arises from the fact that the two types shade into each other by insensible gradations; in fact a given industry is carried on by some after the factory type and by others after the manner of handwork.

The national industrial law states the following criteria according to which administrative and judicial authorities may decide whether a given business be factory or handwork: "(1) The size and extent of the space used; (2) the extent and value of the annual production; (3) the kind of division of labor and the more mechanical or the more craftsmanlike cooperation of the workers; (4) the more or less extensive use of machines; (5) production on the basis of special orders and retail sale, or for a stock of goods or large-scale production (or partial production); (6) the character of the industry as a by-industry of the machine or large industries, especially the preparation of specialties; (7) the personal sharing of the business head in the production of the commodity, or the limitation of his activity to the commercial superintendence; (8) the training of apprentices according to the manner of handwork, and the employment of youthful workers" (who are not apprentices, which is typical of factories).[1]

This division into handwork and factory industries is profoundly important in all industrial questions in Germany. The country has been and remains slow in substituting modern factory types of industry for the older and more simply organized handwork. Not that factories as large as any do not exist in Germany, but the proportion of workers busied in them is probably less than in the United States; how much less is very hard to tell. Census figures for 1907 show the following proportions of all industrial workers in establishments of different sizes:[2]

	Per cent.
Persons working alone	10.1
Persons in establishments employing 2 to 5 persons	19.4
Employing 6 to 10 persons	6.6
Employing 11 to 50 persons	18.4
Employing 51 to 200 persons	20.1
Employing 201 to 1,000 persons	17.3
Employing over 1,000 persons	8.1

The lesser importance of factories in Germany has made some of the industrial problems easier to solve than they are in the United States. This is notably true of apprenticeship and industrial education, whose hardest problems on both sides of the water are connected with factories.

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[1] R. G. O. (imperial industrial law), p. 297.

[2] Bücher, Karl. The "Law of Mass Production," in Zeitschrift für die gesammte Staatswissenschaft, 1910, 3 Heft, p. 430.

In certain trades and among certain people in Germany handwork is sure of a permanent place. The building trades, for example, will probably always require the general type of industry and organization which now obtains in handwork. All trades, or cases of practice of trades, where individual orders are the rule or small local shops are needed or artistic design is the chief consideration, will continue to be carried on after the craftsmanlike manner of handwork. Another stronghold of handwork is the farming population in some districts, who, when farm duties do not press, supplement their scanty incomes by manufacturing a great variety of tasteful and useful articles. The German people as a whole realize the advantages of the handwork type of industry, and with traditional conservatism have opposed the rising prominence of factories and are striving to keep all industries possible in the fold of handwork. In this effort they not only show that "in Germany, as in no other country the people have been unwilling to break with their past," but they are also conserving that type of industry in which the personal and more human factors have a fair chance to control the situation to the welfare of all concerned, and limiting the application of that type in which the technical factors tend to ride rough-shod over the personal, often to the benefit only of the consumer.

The laws and institutions by which the Germans have attempted to solve the hard problems of apprenticeship and industrial education center chiefly about handwork, for the problem in the factories is to-day far from solved. In the same sphere of industry our greatest problems of industrial education lie. Germany can help us by her example in our efforts to solve these problems. But her greatest triumphs have been in the sphere of handwork, and we must modify the lessons she teaches to suit the greater importance of factory industries with us.

The degree of specialization attained in German industries is of the utmost importance in her attempted solutions of the problem of industrial education. How much specialization exists is, however, extremely difficult to discover and would require for a complete answer an extensive investigation. I can offer a limited amount of data on the subject.

By specialization, for the present purposes, we may understand the practice by each worker of only a more or less narrow subdivision of a trade. This definition suggests the question, What constitutes a trade—a wide or a narrow range of operations? No precise answer can be given, or rather, the type of answer varies from trade to trade. German trades, like those of the United States, show a gradual tendency to split up, while new and formerly unheard-of trades constantly develop. But in Germany, in some cases, the original trades

were (and are) more comprehensive than those in the United States, and so the splitting up of these more comprehensive groups of operations results in less of specialization than in the United States. For example, the complete trade of the German Klempner (plumber) includes plumbing, gas, water, and steam fitting, sheet-metal work, miscellaneous repairing, and generally also electrical fitting.

Another feature of German specialization, found probably less often in the United States, is the training of workers in handwork, where they learn their whole trade, and then later specialize in factories. Thus a plumber will learn the whole of his trade in an old-style shop, or a branch of it only in newer more specialized ones. This training will generally include electro-technics. He can then enter as a journeyman a factory manufacturing electrical goods and learn and practice a specialized branch of his trade, as armature winding. The handwork masters say that by this process the factories withdraw the best journeymen from handwork.[1] The Reichstag, in an inquiry into the conditions in handwork instituted in 1895, stated that in their opinion the number of handwork journeymen who had entered factories far exceeded the number remaining in handwork.[2] This type of specialization has a manifest advantage over that practiced in many or most factories in this country, in that it is subsequent to and rests on a general practice and acquaintance with the whole trade or a large branch of it.

The extent of specialization varies greatly from locality to locality, often even though these may be adjacent. In general, we may say that, as in the corresponding industries in the United States, specialization has gone far in factories, but not nearly so far in handwork. Many handwork shops, however, carry on but a part of the whole trade. For example, some cabinetmakers practice all branches of their trade, some make only interior house "trim," some only furniture, and some only certain sorts of furniture. But businesses which make, for example, only chairs, or only chairs of a certain type, are usually among those classed as factories. Informants stated that there was little specialization in their locality in Mannheim, Coblenz, and Cologne; that there was little specialization in handwork in Chemnitz, Elberfeld, Dortmund, Essen, and Aachen; and that there was much specialization in Berlin, Munich, Frankfort on the Main, Barmen, Duisburg, and Dusseldorf (in most of these cities both in factories and handwork). To be cautious, a large allowance should be made in dealing with this data, for the personal outlook of the informants, probably often biased by one-sided special knowledge. Of one thing we may be sure: The problem of industrial education, as in the

[1] Dusseldorf Handwerkskammer.

[2] *Stenogr. Ber.* ü. *d. Verhdl. d. R. T. 1895–97, 3.80,* quoted in Coelsch, Dr. Hans. *Deutsche Lehrlingspolitik im Handwerk, 1910, p. 122.*

United States, is not identical for different sections of the country. To sum up: The fact and the problem of specialization are the same in the two countries, but the United States has the problem in an acute form, both because more of our industries are of the factory form and because specialization in small and less specialized shops (corresponding to German handwork) has gone further than in the older country.

The ordinary workman, specialized or not, the private in the ranks, has in all the initiative and management of the business in which he works, and often in its welfare institutions also,[1] but little say. The prevailing sentiment of the middle class seems to be that he should be kept from much or any influence or control in industrial matters. Yet the workers do not so regard the matter, and many of them are striving with great energy for more democracy in industry.

The German trades-unions are less strong and unified than those of England and the United States.[2] The right to combine is guaranteed under the law to all employers and employees, except servants, farm workers, and sailors. Strikes and lockouts are legitimate, but the means by which they are carried on are more closely regulated than with us, and the rights of the unions in general more restricted. Politics are prominent in the German unions and divides them into three separate camps. Of these, that of the "Free," or Social Democratic unions, is by far the largest, numbering about 700,000 members. It is closely associated with the Social Democratic Party, pays relatively little attention to mutual aid within the union, and much to political activity without. The "German" or Hirsch-Duncker unions number about 100,000 members and are framed on the English model, with mutual aid or benefit features prominent, and a less militant political attitude. The third group, of less than 100,000 members, is that of the "Christian" unions, formed under the influence of the Roman Catholic Church as a protest against the atheistic and radical social attitude of the Social Democratic unions.

Distinct from the unions are the guilds, some of them descended without break from the bodies which so dominated industry during medieval and early modern days.[3] These hold such peculiar and important relations to industrial education and apprenticeship that they are worthy of fuller consideration, which I offer in the chapter following.

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[1] Note an exception, ch. 6, p. 58.

[2] Spec. Consular Rep., vol. 33, pp. 254–263.

[3] Bulletin No. 27, Bureau of Labor, pp. 314–328.

CHAPTER VI.

GUILDS AND CHAMBERS OF INDUSTRY.

The industrial revolution, which came in Germany more as an evolution, broke down the power of the old-time guilds (Innungen) and left industry with few helmsmen save the heads of individual firms. The permanent interests of industry, as well as the public interest, suffered in consequence. Especially was the lack of the former guild regulation seen in the defective training given to apprentices,[1] and a multitude of other abuses sprang up, among which these pertaining to apprenticeship were chief. Uncontrolled competition was weighed and found wanting by the Germans. Regulation there must be, and yet preferably regulation in which the undertakers of industry should have a share. To meet this need, the old-time guilds were revived, and in place of their old-time powers, new rights and powers were given to them. A few of the old-style guilds were reorganized on the new basis, but most existing guilds have arisen during the last few decades, under the new laws. These guilds are designed primarily to meet the needs of handwork, and have almost no bearing on factory industries. Very few factories have any connection with guilds.[2]

Guilds are either free or compulsory. Any independent tradesman may establish a free guild [3] for a trade in a definite district.[4] The requirements for membership are: [5]

(1) That the candidate carry on independently the industry for which the guild is organized, and in its district; or (2) that he be a foreman or in a similar position in a factory engaged in the same industry as that of the guild; or (3) that he shall have formerly held one of the above positions and now practices no other trade; or (4) that he be a handworker engaged in agriculture or industry for wage. The ability of the candidate to carry on the industry independently may be determined by examination. No qualified person may be denied membership, and no exceptions to these rules are allowed.

The purposes or duties of the guilds are stated by law to be the development of an esprit de corps and trade honor; the promotion of friendly relations between masters and journeymen, as well as care for journeymen's homes (Herberge), and information about

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[1] Coelsch, Dr. Hans. *Deutsche Lehrlingspolitik im Handwerk*, p. 50.
[2] An engineer of Fried. A. G. Krupp.
[3] R. G. O. (imperial industrial law), sec. 81, pp. 254.
[4] Ibid., sec. 83, pp. 259ff.
[5] Ibid., sec. 87, pp. 266ff.

employment; the detailed regulation of apprenticeship, and the care for the technical, industrial, and moral training of the apprentices; and the decision of disputes between guild members and their apprentices.[1] Besides these prescribed duties, guilds have certain other permitted activities. They may establish and support schools for industrial, technical, and social education of masters, journeymen, and apprentices.[2] They may hold journeymen's and master's examinations and certify the candidates which pass them. They may establish funds to aid their members and their employees in case of sickness, death, inability to work, and other emergencies. They may establish guild courts, which shall take the place of the regular authorities as the court of the first jurisdiction, in the settlement of disputes between members and their employees. Finally, they may establish a common business to promote the interests of the guild members.

The statutes of the guilds must regulate within the limits allowed by law, and by the regulations of the Government authorities and chambers of industry,[3] a number of matters, including the supervision of the regulations of the activities of journeymen, apprentices, and other workers, and those for attendance on improvement or trade schools, and for the regulation of apprenticeship.[4] Deciding on the detailed statutes for the regulation of apprenticeship is one of the (10) most important kinds of business which can not be delegated to the directorate, but must be undertaken by the guild assembly.[5] The guilds are authorized to supervise, through agents, the execution of the legal and guild regulations in the industry for which the guild is organized. Such agents of the guild as are selected must be allowed access to the workshops and employment rooms of guild members during working hours.[6] These regulations do not apply to any workrooms which are parts of agricultural or factory industries,[7] which indicate that the guilds are designed distinctly for handwork.

The guilds are under the close supervision and authority of the subordinate Government administrative authorities.[8] All guild statutes, as well as any amendments to them, must be approved by the proper authorities.[9] The guild institutions, as schools, insurance funds, etc., must be administered under special regulations, to be approved by the legal authorities.[10] If a guild neglects to submit to

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[1] R. G. O., sec. 81a, pp. 254, 255.
[2] Ibid., sec. 81b, pp. 256ff.
[3] Ibid., sec. 81a, 3, p. 254.
[4] Ibid., sec. 83, 10, p. 260.
[5] Ibid., sec. 93, 5, pp. 280ff.
[6] Exceptions: If a master fears harm from such inspection, he can provide at his own cost a substitute, who shall furnish the directorate such information as they desire.
[7] R. G. O., sec. 94c, pp. 285ff.
[8] Ibid., sec. 96, p. 289.
[9] Ibid., sec. 84, pp. 262ff.
[10] Ibid., sec. 85, pp. 264ff.

the proper demands of the legal authorities, these may appoint a representative who adjudicates guild disputes and takes initiative if necessary. No final decision can be reached by a guild on amendment of its statutes or by-laws, or its own dissolution, without the presence of a representative of the authorities.[1]

Of great interest as indicating a trend toward democracy in industry, or a revival of the voice of journeymen in the old-time guilds, is the journeymen's committee. All journeymen employed by a guild member, and in possession of citizens' rights, may vote for members of the committee of journeymen.[2] This committee takes part in the guild affairs as largely as the law and the guild statutes allow. It is concerned especially with the regulation of apprenticeship, with the journeymen's examination and with the founding and administering of all institutions for which the journeymen contribute, in which they have special interest, or which are designed to aid them. The guild statutes, in their detailed regulations, must provide that (1) in the discussion and final decision of the guild directorate at least one member of the journeymen's committee shall be admitted with full voting rights; (2) in the discussion and final decisions of the guild assembly all the members of the committee shall be admitted with full voting rights;[3] and (3) in the administration of institutions of which journeymen, according to the president of the guild, make use, journeymen elected from their committee are to participate in equal numbers with the guild members.[4]

Guilds are allowed legal status and liability limited to their property.[5] They may collect dues from their members, fees for institutions established by them, and fines; and these are collectible by force of law as any other just debt.[6] The law further regulates the form of organization and mode of doing business, the organization of guild courts, and other matters, but allows, however, within the prescribed forms, considerable freedom of activity to the guilds.[7]

Under these laws guilds have been established in great numbers throughout Germany. Their effect has been to bring about some degree of cooperation of competitors in industry in common regulation of what most concerns them. Their influence on apprenticeship is highly beneficial, tending to replace neglect by care, exploitation by education. Acting under their permitted powers, the guilds have founded numerous industrial schools. Many of these have been taken over since by cities or other public authorities; many are controlled and supported partly by the guilds which founded them and partly by Government, while some are to-day wholly guild schools. In almost all trade schools, whether founded by guilds or

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[1] R. G. O., sec. 96, pp. 289ff.
[2] Ibid., sec. 5a, p. 288.
[3] Without which any decisions are void.
[4] R. G. O., sec. 95, pp. 286ff.
[5] Ibid., sec. 86, p. 266.
[6] Ibid., sec. 88, pp. 270ff; sec. 89, pp. 271ff.
[7] Ibid., secs. 81–99, pp. 254–296.

not, and in many other industrial schools also, the guilds of the trades concerned are represented on the boards of trustees, furnish models, require their apprentices to attend, assist in conducting examinations and otherwise aid the schools.

A special type of guild may also be established under the national industrial law—the compulsory guilds (Zwangsinnungen). For the promotion of the common industrial interests of a handwork trade or of several such related trades, and on motion of the handworkers in the district, the authorities must require all those in the district engaged in the trade or trades concerned to join together to form a new compulsory guild. Several conditions, however, must first be fulfilled. The majority of those in the industry or trade and district who employ journeymen or apprentices must approve, the district must not be too large to permit the ready attendance of all members on guild gatherings, and the number of members must be enough to form an efficient guild. The initiative in the formation of a compulsory guild may come from a free guild (as all noncompulsory guilds may be called) of the industry concerned, or from individual handworkers.[1] An official ratifying vote of all the handworkers in the trade or trades and district concerned must be secured by the authorities. This vote is taken by mail, and a majority of those voting decide the question.[2]

On the formation of a compulsory guild, the (free) guilds which are organized for the same industry and district must dissolve. Guilds which include also other branches of industry continue in existence, but those of their members who are required to join the new compulsory guild must withdraw.[3] The property of a guild dissolved as a result of the formation of a compulsory guild [4] may go over with its liabilities (not to exceed the property) to the compulsory guild. Sick funds are normally to be transferred to the compulsory guild, and other benefit funds may be so transferred.[5]

The regulations for guilds in general apply also to compulsory guilds, with such modifications as the law specifically makes.[6]

All those who carry on independently in the district the trade or industry for which the compulsory guild is established are required to join. Exception is made of those who carry on the industry according to factory methods. The approval of the authorities is requisite for the accession of certain doubtful classes, as handworkers in agriculture or industry for pay who employ journeymen or apprentices and those engaged in house industries.[7] In addition to those required to join, others are entitled to do so. Such are (1) those included in

[1] R. G. O., sec. 100, pp. 300ff.
[2] Ibid., sec. 100a, p. 302.
[3] Ibid., sec. 100b, p. 303.
[4] Ibid., sec. 100k, pp. 308–309.
[5] Ibid., sec. 100i, pp. 309–10.
[6] Ibid., sec. 100c, p. 304.
[7] Ibid., sec. 100f, pp. 305ff.

classes 1 to 3, inclusive (p. 56), as well as all handworkers engaged in agriculture or industry for pay and who employ neither journeymen nor apprentices; and (2) those who carry on the industry of the guild according to factory methods, if the guild assembly votes for them.[1] In cases of question concerning right or duty of membership, the legal authorities decide the matter.[2]

The special care given to apprenticeship regulation is shown by the enforcing of stricter requirements for eligibility to committees responsible for the execution of the regulations on apprenticeship than for eligibility to other committees or to the guild directorate. Journeymen also who are on these apprenticeship committees must meet higher tests than for membership on other committees.[3] The detailed regulations of apprenticeship by the assembly of a compulsory guild requires the approval of the superior administrative authorities, whose decision must be preceded by a hearing of the chamber of industry of the district.[4] This closer degree of supervision than is required for the regulations of free guilds is maintained because the regulations of compulsory guilds must be followed by all its members, whether required to join or not; and even handworkers who employ neither journeymen nor apprentices may, under certain conditions, be required to join. Thus all handworkers in the industry and district may be brought under the guild, and through them employees of all grades may be indirectly affected. To require all handworkers who employ neither journeymen nor apprentices to join the guild, the assembly must first vote for the proposal, a majority of those to be included must approve and the requirements as to the extent of the guild district must be met.[5]

Because of their compulsory nature, these guilds are not allowed to require a member to share in any benefit fund other than the guild sick fund. No cooperative business may be established by a compulsory guild, such as funds for loaning, cooperative purchase or sale bureaus, etc.[6] Further, no compulsory guild may act in restraint of trade by limiting the prices its members may charge or the customers they accept.[7] Guild contribution from members may by permission of the central authorities of the State be collected by addition to an industry tax, if such exist.[8]

A compulsory guild may be dissolved by order of the authorities, but only when three-fourths of the members vote in favor of the measure. A further check is put on dissolution by declaring the division of the guild property between the members to be illegal. Such property shall go to the guild welfare funds or to a new free

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[1] R. G. O., sec. 100g, pp. 307ff.
[2] Ibid., sec. 100h, p. 308.
[3] Ibid., sec. 100r, p. 313.
[4] Ibid., sec. 100p, p. 313.
[5] Ibid., sec. 100u, pp. 317–318.
[6] Ibid., sec. 100n, pp. 311ff.
[7] Ibid., 100q, p. 313.
[8] Ibid., sec. 100s, pp. 314ff.

guild for the same industry, or to the chamber of industry of the district, to be used for one of the objects stated just above.[1]

Machinery by which neighboring guilds can cooperate is provided in the guild councils (Innungsausschüsse), which may be established for all or for several guilds standing under the same supervisory authority. Such councils concern themselves with the common interests of the participating guilds, which may delegate to them further rights and duties. The central government of each State may give to a guild council certain definite legal status, including limited liability (limited to its property). Guild councils are subject to the legal authorities much as are guilds.[2]

Guild associations (Innungsverbände), unlike guild councils, are formed only by guilds not under the same supervisory authorities. Their purpose is to advance their industry by assisting guilds, guild councils, chambers of industry, and authorities to carry out their legal duties. They are further authorized to regulate the furnishing of information about employment, and to found and support trade schools.[3] An association may allow individual handworkers to join and represent their guild in the association.[4]

The associations are under the supervision of the superior administrative authorities in whose district their headquarters are.[5] The association statutes must be approved by the authorities.[6] They must furnish annually a list of the guilds which are members in the association.[7] The association directors are authorized to present a report and proposals to the proper authorities and are obliged, on demand of these authorities, to give due attention to industrial questions.[8] All assemblies of an association are to be held in its district, and may be forbidden or stopped if, by advance notice of the orders of the day or otherwise, there is evidence of purpose to exceed the legal sphere or powers of the association.[9] An association may establish benefit funds for the members of the constituent guilds and their employees.[10] The national senate (Bundesrat) may grant special legal status to any guild association, with limited liability (limited to its property).[11]

Halfway between the official Government authorities and the primarily private guilds stand the semiofficial chambers of industry (Handwerkskammern), literally, chambers of handwork. Some of these bear the name of Gewerbekammer, but all are organized under the same law. These chambers are established by authorization of the State central authorities [12] to represent the interests of hand-

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[1] R. G. O., sec. 100t, pp. 315ff.
[2] Ibid., secs. 101–102, pp. 318–320.
[3] Ibid., sec. 104, pp. 336ff.
[4] Ibid., sec. 104a, pp. 338ff.
[5] Ibid., sec. 104k, pp. 343ff.
[6] Ibid., sec. 104b, pp. 338ff.
[7] Ibid., sec. 104c, pp. 339ff.
[8] Ibid., sec. 104c, pp. 340ff.
[9] Ibid., sec. 104d, p. 340.
[10] Ibid., sec. 104l, pp. 342ff.
[11] Ibid., sec. 104g, pp. 341ff.
[12] Or of several States, if the chamber overlap State boundary.

work. Branch chambers may be established, or divisions for groups of industries.[1] The district for one of these chambers is much larger than that typical of guilds. In 1910 there were about 71 chambers of industry in Germany.[2]

The chamber of industry is an elective body, elected (1) by the handworker guilds [3] having headquarters in the district of the chamber, and from among their members, and (2) by the industrial societies (Gewerbevereinen) and other societies which pursue the industrial interests of handwork, of whose membership at least one-half are handworkers who belong to no guild and reside in the district of the chamber.[4]

The requirements for eligibility to the chamber are rigid. Each member must be eligible to be a juror; must be 30 years old; must have carried on a handwork trade at least three years in the district of the chamber and be authorized to train apprentices.[5] By high qualifications and long term of office, efficient service is secured from the members. The term of membership in the chamber and on its committees is six years, half of the members retiring every three years.[6] The chamber may elect, according to its statutes, additional qualified members up to a fifth of its original number, and may invite qualified men with advisory power to its sessions. It may delegate regular or special duties to its committees.[7]

The special concerns of the chamber of industry are: (1) The detailed regulation of apprenticeship; (2) the supervision of the regulations concerning apprenticeship; (3) the aiding of the State and local authorities in the promotion of handwork by reports on questions important to handwork; (4) to debate motions and present conclusions and annual reports concerning handwork to the authorities; (5) to establish examining committees to manage the journeymen's examination; and (6) to form committees of appeal from the examining committees.[8]

The chamber has the right to be heard in all weighty matters concerning the common interests of handwork or any of its branches. It is further authorized to concern itself with institutions for the promotion of industrial, technical, and moral advancement of masters, journeymen, and apprentices, as well as to establish and support trade schools.

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[1] R. G. O., sec. 103, pp. 321ff.
[2] Coelsch, pp. 42, 128.
[3] Handworker guilds are all guilds the majority of whose members are handworkers. R. G. O., sec. 118, pp. 606ff.
[4] R. G. O., secs., 103a, and 118, p. 606ff.
[5] Ibid., sec. 103b, pp. 323ff.
[6] Ibid., 103c, p. 324.
[7] Ibid., 103d, p. 324.
[8] Ibid., 103e, pp. 325ff.

The guilds and guild councils are obliged to follow the orders issued by the chambers of industry which cover their district and which are within its powers. All statutes and regulations of the guilds and guild councils which conflict with the regulations of the chamber of industry in authority are invalid.[1] The costs of the establishment and activities of the chamber of industry are, in Prussia, to be paid by the handworkers of the district and collected like a tax.[2] In Prussia, also, the permanent officials of the chambers have the rights and duties of State officers and take oath as they do.[3]

Factory industries are normally regulated by the semiofficial chambers of commerce, which hold for commerce, including factory industries, a position similar to that of the chambers of industry in handwork. However, these chambers of commerce are much less interested and much less zealous in the regulation of factory industries than their fellows in handwork. They commonly neglect this regulation, largely or wholly. Especially is this evident relative to the highly important conditions of apprentices and youthful workers in factories and to industrial education. In consequence of this neglect, some chambers of industry have stepped into the breach and themselves regulate apprenticeship in factories.[4]

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[1] R. G. O., sec. 103ff. p. 327.

[2] Ibid., sec. 122, pp. 609ff.

[3] Ibid., sec. 120, p. 608.

[4] Thus the Dusseldorf Handwerkskammer, the second largest in Germany, with several branches, regulates apprentices in factories. Data obtained from interviews with directors of Handwerkskammers in Dusseldorf and Aachen.

CHAPTER VII.

APPRENTICESHIP.

We have seen how in the United States apprenticeship has declined, and how throughout its recent history the prevailing attitude toward it has been that of *laissez faire*. The natural result of such an attitude and course of action has been inadequate preparation and over-specialization of the boy seeking to learn a trade, and his frequent exploitation as a mere youthful worker. In a strong contrast with American practice concerning apprenticeship is that of Germany. Conserving all that was possible of the virtues of the old-time apprenticeship, she has added new virtues to the system, minimized the former evils, and with the most deliberate care sought to improve the conditions of entrance upon and preparation for the trades. Efficiency, as always in modern times, has been her watchword, and regulation her means. So we find a well-developed legal system of regulation, which to strongly individualistic minds involves over-regulation. Whether it be so, or whether the system of *laissez faire* in vogue in our own country be better, we shall seek to determine from the data here presented.

What do the Germans understand by the term Lehrling (apprentice)? The most exact answers are to be found in the National Industrial Law and in certain court decisions. They agree in regarding the apprentice as a young person who is engaged in an industry chiefly for the purpose of learning the industry or a part of it.[1] The chief criterion of the industrial law as to whether a given individual is an apprentice or not is whether he is learning the trade or not.[2] An apprentice is thus to be clearly distinguished from a youthful worker who is not an apprentice, for the latter even though working in the same shop or even side by side with the apprentice is not necessarily taught the trade and is protected by none of the regulations which safeguard the apprentice. Apprenticeship is the usual mode of entrance to a handwork trade; but factory industries are entered by boys either as apprentices or as youthful workers (called, to distinguish them from apprentices, unskilled workers—*ungelernte Arbeiter*).

The purpose of apprenticeship is primarily the efficient training of the apprentice, and this is regarded as of the utmost importance to his individual well-being in his trade and out, and of the greatest civic importance, for the efficiency and general development of whole

[1] Coelsch, pp. 30–32.

[2] Bitzera, in Coelsch, p. 33.

social classes of the citizens depend largely or chiefly on the proper training of apprentices.

I can not leave the matter even thus, for investigation in Germany leads me to conclude that the core of the industrial education situation there is not the industrial schools, but the system of apprenticeship.[1] For by far the larger part of the training of the great majority of apprentices still takes place, not in the school, but in the workshop. The extraordinary growth of industrial schools in Germany during the last few decades should not blind us to this fact. Indeed the system of industrial schools, so far as that is made up by the compulsory improvement schools, is in a sense but a part of the apprenticeship system, though the compulsory attendance on these schools applies also to unskilled youthful workers as well as to apprentices. Hour for hour, the industrial schools probably leave a deeper impress on the apprentices and other students attending them than do the shops; but we must not forget that the shops have the apprentices an average of perhaps 56 hours a week and the schools but 4 to 8.

Some of the provisions of the National Industrial Law on apprenticeship are applicable to factories and handwork industries alike; while others apply only to handwork, which is thus more closely regulated.[2] The ordinary provisions concerning apprentice contract, etc., do not apply to apprentices in teaching workshops (Lehrwerkstätten) recognized by the State nor to the apprenticeship of a son to his father.[3] The first of these exceptions is probably desirable where the workshop in question is the actual substitute for that of the master, but not, as in Baden and Wurttemberg, for regular shops merely supervised by the State.[4] In case a son be apprenticed to his father the above exception applies only if the chamber of industry be informed in writing of the existence of the apprenticeship, the trade, day of its beginning, and its duration. This provision applies to all apprentices, handworkers, and others, who are under the supervision of a chamber of industry. This is for the purpose of protecting the apprentice in certain exigencies, but is not intended to replace the paternal relation by a legal one.[5]

The right to have apprentices is very carefully limited. No one not a citizen is allowed the right.[6] Grave and repeated offenses against

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[1] Prof. Charles McCarthy did not realize the vitality of apprenticeship in Germany to-day when he made the following statement: "The Germans have studied out a plan for replacing *the apprenticeship system, now worn out* because of the growth of the modern factory system and the minute division of labor entailed by this system. * * * The Germans taking *the remnants of the apprenticeship system, which of course still exists here and there,* have added to it the continuation school." (Italics mine.) Report of Wisconsin Commission on Industrial and Agricultural Training, 1911, p. 20.

[2] Statements below concerning the law of apprenticeship apply to all apprentices unless otherwise stated.

[3] R. G. O., sec. 126b, p. 407ff.

[4] Coelsch, p. 69.

[5] R. G. O., sec. 126b, pp. 407ff. and Coelsch, pp. 69, 70.

[6] R. G. O., sec. 126, p. 406.

apprentices or unfitness (bodily or mental) to train them permit the temporary or permanent withdrawal of the right.[1] These regulations cover all industry. In handwork, in addition, all who train (i. e., supervise and instruct) apprentices must be at least 24 years old and must have passed their master's examination (and thus have the title of master). If such a person does not have the title of master in the industry or branch in which he wishes to train apprentices, he may be permitted to do so if he has fulfilled the required time of apprenticeship and passed the journeyman's examination in that branch of industry or if he has for five years carried on independently the handwork concerned or been for an equal period engaged in the work as foreman or in a similar position.[2] The higher administrative authorities may confer the right to train apprentices on others than those who fulfill the above conditions after the chamber of industry and any guild for the industry and district have been heard. Exception is further made from the requirement of the master's title for a period not to exceed one year in the case of the death of the employer, in order that the apprentices may continue in the establishment.[3] Journeymen are permitted to instruct apprentices in single technical manipulations. Apprenticeship in a handwork trade may be carried to completion in a factory if supplementary training be secured in a teaching workshop supported or recognized by the State or by other institution for industrial education. Before recognition of other institutions for the purpose the chamber of industry of the district must be given ample opportunity to present its views.[4]

One who meets the full requirements qualifying him to train apprentices in one branch of industry may train them also in other branches of the same industry. One qualified in one industry may train apprentices also in related industries. The local chamber of industry decides as to what industries are to be considered as related.[5] The criteria on which these decisions are based are primarily either similarity of technique (as textile industries), or of the raw materials (as metal industries), dependence of one industry upon another for its raw materials, cooperation of several industries to produce the same product (as the building trades), or relations of the products in use (as food products).[6] The differing histories of industry in different localities have resulted in different decisions as to what are related industries.[6]

Throughout Germany children must attend the common school (Volksschule), unless permitted to attend some other school, until

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[1] R. G. O., sec. 126a, pp. 406, 407.

[2] R. G. O., sec. 129, pp. 418ff. This provision has eased the transition to the present law, especially for old handworkers without the title of master. Cf. Coelsch, p. 46.

[3] R. G. O., sec. 129, pp. 418ff.

[4] R. G. O., sec. 129, pp. 418ff.

[5] R. G. O., sec. 129a, p. 422.

[6] Coelsch, pp. 41, 42.

they are 14 years old.[1] The great majority leave school then, and the boys (with whom we shall be mainly concerned) go to work under an employer. They must do this in most cases to supplement the meager family income. They may go into agriculture, commerce, or industry. Those who choose industry have before them the alternatives of skilled or unskilled work. Those whose families are not well enough off to forego the somewhat larger immediate wage, or who have less foresight, enter the ranks of the unskilled either as youthful workers (ungelernte arbeiter) or as errand boys and the like (Laufburschen). They will receive as wage, on the average, 8 to 10 marks ($1.92 to $2.40) a week the first year, rising in about four years to their maximum of 15 to 18, or even 20, marks ($3.60 to $4.32, or $4.80).[2]

The employers do not want the boys as apprentices so young as 14 years of age, and do not regard them as very useful for the first year or so. But the boys' need is pressing; they must have work, and the employers are constrained to take them. As a result, they are set at odd jobs for the first period of their apprenticeship. An apprentice will be paid 2.5 marks (60 cents) a week for the first year, on the average, 3 to 4 marks (72 to 96 cents) the second, 4 to 5 (96 cents to $1.20) the third, and 5 to 6 ($1.20 to $1.44) the fourth year, if the apprenticeship lasts so long.[2] Handwork apprentices sometimes receive board and room and a trifle of pocket money in lieu of wage.[3] Those parents who can do a little better by their boys keep them longer in school (Gymnasium or Realschule, rather than a trade school usually), if possible, until they have won the coveted one-year military service certificate, which would normally keep them in school until they are 16 years at least.[4] Such boys, not many in number, begin their apprenticeship at about 16 years, and ordinarily learn faster, probably because of greater maturity and habits of application, than most of those who entered the same industries at 14 years of age.

The factories, like most in the United States, do not desire many, if any, apprentices; though they call for many unskilled workers, both youthful and mature. Such workers, other than apprentices, need not be given any instruction in the factory.[5] Apprenticeship in factories differs from that in handwork in that the legal regulations are less rigid, the supervision of these regulations (nominally by the chambers of commerce, but often actually by the chambers of industry [6]) is less complete, the tendency to specialization is more marked, and in consequence the chances of the apprentice for a well-rounded

[1] With few exceptions.
[2] Herr Schulinspektor August Kasten, Hamburg.
[3] Dr. Rudolph Görnandt, a director of Hamburg Gewerbekammer.
[4] Cf. ch. 5, p. 51, note 1.
[5] Herr Direktor Jung, Gewerbliche Fortbildungschule, Barmen.
[6] Cf. ch. 6, p. 62.

grasp of his trade are ordinarily poorer than in handwork, and his resulting need of supplementary training in industrial school is greater. Most apprentices, however, learn a handwork trade.

As the boy seeks to choose his trade, guided by the relative opportunities and his own leanings, he finds the guilds, chambers of industry, and other industrial bodies ready to help him in the choice. The way in which the advice is given and the boy aided to secure a place varies from place to place. Special bureaus in some localities advise him, booklets about the trades furnish him data on which to decide, and employment bureaus, public and private, help him to secure a position.[1] The machinery of vocational guidance, so new in our own country,[2] has been for a long time in operation among guilds and other industrial associations of Germany. Even there, however, the machinery is not fully developed, is not everywhere active, and many boys drift or fall into their occupations, instead of making a rational choice, based on knowledge of the significant facts.

It has long been customary for apprenticeships to be begun by a period of probation, and the national industrial law has since 1897 required such a period. By it either party is given the right to withdraw within four weeks unless a longer period, not to exceed three months, has been agreed upon.[3] This right of withdrawal can not be waived.[4] Originally the probationary period was desired to prevent thoughtless entering on apprenticeships,[5] but now it is intended to show both parties whether they can probably bring the apprenticeship to a successful conclusion, and whether the work be suited to the ability and strength of the boy.[6]

The repeal of the older medieval apprentice regulations resulted in the neglect of the apprentice, morally and physically, shown by insubordination, breach of contract, and inefficiency.[7] For several decades compulsory written contracts were popularly demanded, chiefly on the grounds that such contracts would limit the utilization of minors by their parents, protect apprentices from exploitation as youthful workers, and employers from breach of contract, and generally increase the feeling of responsibility and improve the regulation of apprenticeship. Since 1893, such contracts have been required by the National Industrial Law.[8] The apprentice contract must be executed in writing within four weeks of the beginning of the

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[1] Cf. list of booklets on vocational guidance, in References, p. 151.

[2] Pioneered by the Vocational Bureau, Boston, recently founded, whose activities are wide and expanding, and example illuminating.

[3] R. G. O., sec. 127b, pp. 412, 413.

[4] Coelsch, p. 91.

[5] *Erhebungen des Reichskanzleramts über die Verhältnisse der Lehrlings usw. 1875,* quoted in Coelsch, p. 89.

[6] Coelsch, p. 88, 89.

[7] Ibid., p. 50.

[8] Ibid., p. 53.

apprenticeship and must contain certain provisions.[1] If no written contract be executed, or if the execution be delayed (classed as a "continuous offense"—Dauerdelikt), or if some of the provisions be omitted, the contract is still valid,[2] but the employer is punishable for each offense by fine of not over 20 marks ($4.80) or imprisonment of not over three days.[3] But not even in law-abiding Germany, and with such a law, do we find all apprenticeships have a written contract. In handwork they are nigh universal and in the larger factories usual, but in the smaller factories they are generally or often absent.[3] The carelessness and ignorance of the children and their parents (chiefly the latter) in some districts are largely responsible for the lack of more contracts. Such parents wish to receive as much money as possible from their children's work, and so wish to have them free to change to whichever factory offers the largest reward for the time being. This breaks up the continuity of their instruction and is bad for them.[4]

The required provisions in the apprentice contract are statements of—(1) the industry or branch; (2) the length of the apprenticeship; (3) the mutual services required; and (4) the legal and other conditions under which one party may withdraw from the contract.[5] Under the mutual service (3) are to be specified the money paid to the master, if any (for board and lodging, unless otherwise stated), wages, board and lodging, furnishing of tools, washing, etc.[6] The contract must be signed by the employer or his responsible representative, by the apprentice, and by the latter's legal representative.[7] Absence of one of these signatures makes any claim based on the contract invalid.[8] The legal representative of the apprentice is liable for the fulfillment of the contract only if so specified, and then only to the extent of his authority over the boy.[8] One copy of the contract is to be furnished him. The employer, to make possible public supervision of the apprentice contracts, must turn over the contracts to the local police authorities on demand.[9] If the employer be a handworker and guild member, he must furnish a copy of the contract to his guild in lieu of the police, within 14 days after execution. The guild may require that the contract be executed before it. In this case the guild must furnish a copy of the contract to the master and another to the father or guardian of the apprentice.[10]

With handworkers, then, the guild supervises the apprentice contract in place of the police. The chambers of industry, however,

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[1] R. G. O., sec. 126b, pp. 407ff.
[2] Schicker, Reger, Landmann-Rohmer; in Coelsch, p. 54.
[3] R. G. O., sec. 150, p. 503ff.
[4] Herr Direktor Jung, Barmen.
[5] R. G. O., sec. 126, pp. 407ff.
[6] Schicker, in Coelsch, pp. 62, 63.
[7] R. G. O., sec. 126b, pp. 407ff.
[8] Landmann-Rohmer and Nelken, in Coelsch, p. 65.
[9] R. G. O., sec. 126b, pp. 407ff.
[10] Ibid., 129b, p. 423.

may [1] regulate the guilds in this supervision, and all of them have done so.[2] Those masters under a chamber of industry must make all their apprentice contracts according to specified normal forms and are subject further to the orders for the regulation of apprenticeship (Vorschriften zur Regelung des Lehrlingswesens) of the chamber.[3] The apprentice contracts of the Prussian chambers of industry are all of about the same form, based on the recommendation of the minister of commerce. Those of other States vary more or less from these. The Prussian contracts require compulsory sick insurance of the apprentice, provision of enough time for the apprentice to make his journeyman's piece, and specifications as to who is to furnish the materials for and who is finally to own the piece.[3] The Prussian and most other chambers of industry forbid the employers to take apprentices whose lack of school knowledge or bodily or mental defects unfit them for the apprenticeship in question.[3] The Prussian and Baden chambers require the discharge of apprentices in case of their obstinate failure to attend the required school.[4]

The apprentice may take up his residence with his employer, if they so agree, though this is not done so much as in former days. In case of such residence, only such housework may be required of the apprentice as does not interfere with his training. If he receive neither board nor lodging from his employer, he may not be required to do any household work.[5] This provision was new in 1897 and shows a development of public opinion since the law of 1878, which approved of such work.[6] The financial relations of the employer and apprentice vary. Sometimes the apprentice pays the employer a sum (Lehrgeld), usually for board and lodging. Probably in the majority of cases the employer pays the apprentice, but only a small sum (cf. p. 67 above). Coelsch states that where the apprentice is paid a wage it is usually to stimulate his activity.[7] The tendency is for board and lodging to be furnished less often than in former days and a wage to be more often paid.

On entering the apprenticeship relation, employer and apprentice thereby assume certain legal duties and liabilities. The employer is, according to the law of 1869,[8] to make it his business, by teaching and practice, to train the apprentice to become a skilled journeyman. The employer must instruct the apprentice in all the work occurring in his business (which may be wide or narrow, according to how specialized his business is).[9] This does not require training in more than the trade or branch of industry specified in the apprentice contract, but it is a legal safeguard against overspecialization. Further,

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[1] According to R. G. O., sec. 103c (cf. p. 63, ch. 6).
[2] Coelsch, pp. 66, 67.
[3] Ibid., p. 83.
[4] Ibid., p. 84.
[5] R. G. O., sec. 127, pp. 410ff.
[6] Coelsch, p. 77.
[7] Ibid., p. 97.
[8] 1869, R. G. O., sec. 118. cf. Coelsch, p. 71.
[9] R. G. O., sec. 127, pp. 410, 411.

it includes practical training only, and not theoretical.[1] The employer must allow time for his apprentices under 18 to attend a school recognized by the authorities as an improvement school (see further chap. 8, p. 81).[2] He must train the apprentice himself or through a qualified specially appointed representative.[3] No exceptions to this rule are allowed. It is not sufficient to assign an apprentice to a journeyman without specific instructions to the latter to instruct him. The journeyman must also have certain qualifications.[4] The employer must watch over the conduct and morals of his apprentice,[5] both in and out of his working hours.[6] In factories and large handwork shops, supervision away from work has been found impossible.[7] Employers in such establishments have the recourse of discharge of an apprentice who commits certain offenses.[8] The employer must protect his apprentice from abuse by other workers, and must give him only tasks suited to his strength.[9] He must allow the apprentice sufficient time and opportunity to attend religious service on Sundays and holidays.[9] The employer is liable for neglect of his legal duties to his apprentice to a fine of not over 150 marks or imprisonment for not over four weeks.[10]

The apprentice, for his part, is, according to the law, thrown under the fatherly authority of his employer and of those appointed to instruct him, and obliged to obedience and truth, industry, and probity.[11] This provision includes the right of bodily punishment by the employer or his responsible representative, but not by the teaching representative.[12] Irregular or improper punishment or that dangerous to health is forbidden.[13] Those apprentices whose employers stand under chambers of industry must also follow their regulations, which include in all cases the obligation to obey all the proper orders of the employer or his legal representative and to obey all the shop regulations of the employer.[14] The apprentice may be required to do other mechanical work than that in his trade; for judicial decisions have concluded that his whole working power is at the command of his master, though the fact that the chief purpose of the apprenticeship is training must be respected.[15] The apprentice of an employer

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[1] Coelsch, p. 73.
[2] R. G. O., sec. 120, pp. 380–384.
[3] R. G. O., sec. 127, pp. 410, 411.
[4] Coelsch, p. 74.
[5] R. G. O., sec. 127, pp. 410–411.
[6] Urteil. R. G., in Coelsch, p. 74.
[7] Ibid., pp. 74–75.
[8] R. G. O., sec. 127b, pp. 412ff.
[9] R. G. O., sec. 127, pp. 410–411. Other duties of the employer are to be found elsewhere in this chapter.
[10] R. G. O., secs. 148–9, pp. 499ff.
[11] R. G. O., sec. 127a, pp. 411–12.
[12] Coelsch, p. 85; and Nelken and Schicker, in Coelsch, p. 86.
[13] R. G. O., sec. 127a, pp. 411–12.
[14] Coelsch, p. 86.
[15] Reger, in Coelsch, pp. 76, 78.

under a chamber of industry must care for tools intrusted to him.[1] His father or guardian is liable for the obedience, diligence, and punctual school attendance of the apprentice, but this liability amounts to little unless the father or guardian obligates himself in the apprentice contract to indemnify the master for any such mistake on the part of the apprentice.[2]

Certain circumstances permit the withdrawal from the apprenticeship of one of the parties after the probation period and before the apprenticeship is completed. The employer may discharge his apprentice if (1) the latter has deceived him materially on signing the contract; (2) if he has thieved, lived dissolutely, etc.; (3) if he has left his work when unauthorized to do so or constantly refused to do his duty; (4) if despite warning he is careless about fire; (5) if he commits grave offenses against his employer or others in his business or family; (6) if he intentionally harms the goods of his employer or fellow workers; (7) if he treats the families of his employer or fellows immorally; or (8) if he is unable to continue his work or has a loathsome disease.[3,4] The apprentice may further be discharged if he repeatedly neglects his duties as specified by law,[5] or if he neglects the attendance on trade or improvement school.[3] The chambers of industry of Prussia and some others require those employers under their authority to discharge apprentices for bodily or mental defects or lack of skill or school training.[6]

The apprentice may withdraw if (1) his employer becomes unable to continue his work; (2) if the employer or members of his family abuse or act immorally toward the apprentice or his family; (3) if the employer does not pay the agreed wage, or furnish sufficient work, if piece wage be paid, or makes excessive gains from the apprentice; or (4) if the continuation of the work would be dangerous to the life or health of the apprentice, which fact was not known to him when the apprenticeship began. The apprentice may further withdraw if the master neglect in a dangerous way his duties to the apprentice relative to health, morals or training, or misuse his power of fatherly discipline, or becomes unable to carry out his contractual obligations.[7] If the master die and the business be continued, the apprentice may withdraw if he does so within four weeks.[8]

Neither party to the contract may waive any of the above legal grounds for permitted withdrawal, but they may, says Coelsch, specify additional ones.[9] The apprentice must be released by his

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[1] Coelsch, p. 87.
[2] Ibid, p. 87.
[3] R. G. O., sec. 127b, pp. 412ff.
[4] Ibid., sec. 123, pp. 397ff.
[5] Ibid., sec. 127a, pp. 411–412.
[6] Coelsch, p. 95.
[7] R. G. O., sec. 127b, pp. 412ff.
[8] Ibid., sec. 124, pp. 400ff.
[9] Coelsch, p. 95. Coelsch's view is disputed by several authorities, quoted on the same page.

employer within four weeks after his legal representative (or himself, if he be of age) has given written notice to his employer of intention to change his trade. The employer shall in such case note the reason for leaving in the apprentice's work book (Arbeitsbuch); and the apprentice shall be prevented from working at the abandoned trade under another master within nine months, except with the approval of his former employer,[1] or from working as a youthful worker (not apprentice) for the same period.[2]

The earlier industrial law (as that of 1869) allowed rather easy change of trade, and thus withdrawal by apprentices, and many withdrew in their second or third year. The Society for Social Politics (Verein für Sozialpolitik) declared in 1875, after investigation, that because of such breach of contract poorer preparation of apprentices resulted, for the employers must utilize their working powers early, lest they leave and the employers lose thereby. Payment of apprentices was one cause of such breach; for this parents were at fault, considering wage more than preparation; and employers, for seeking to secure discipline by payment of wage.[3] Apprentices were best held by payment of a wage and holding a part until the apprenticeship was completed.[4] In 1878 the law required compulsory return of runaway apprentices.[5] The law now provides that if an apprentice leaves his employer without legal cause, the latter may only demand his return if the contract be in writing. The police authorities can, at their option, require the apprentice to return to his master if the latter complain within a week, except when a judge decides otherwise. Force, fine (up to 50 marks), or imprisonment up to five days may be used by the police to enforce return.[6] A number of safeguards are thrown around this procedure, to protect the apprentice from abuse—the prompt complaint required from the employer, the option of the police, and the possible interference by a court.

In case the apprenticeship terminates prematurely, damages may be collected only if the contract be written. In certain cases, to be valid, the sort and amount of damages must be specified in the contract.[7] If the apprentice leave the apprenticeship illegally, the damages shall, except as a lesser amount be agreed upon, amount to not over half the customary wage of journeymen in the industry of the employer for the time omitted, but not for over six months. The father of the apprentice is liable, so far as he has the care of the boy, for his breach of contract, as is also any employer who induced him to

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[1] R. G. O., sec. 127c, p. 415.
[2] Landmann-Rohmer, Schicker, Rohrscheidt, and Nelken, in Coelsch, p. 102.
[3] *Schriften des Verein für Sozialpolitik*, in Coelsch, p. 103.
[4] Erhebungen, 1875, a. a. O. S., in Coelsch, p. 104.
[5] Coelsch, p. 105.
[6] R. G. O., sec. 127d, pp. 413ff.
[7] Ibid., sec. 127f, pp. 415–416.

leave his apprenticeship or who gave him work, whether cognizant of the breach of contract or not.[1] Some chambers of industry specify damages for breach of contract in their required normal contracts, but most merely note that agreement on damages is necessary.[2]

There is no limitation to the length of apprenticeship in factories. In handwork apprenticeship must last usually three and not to exceed four years. Within the limit the length may be set by the chambers of industry with the approval of the higher administrative authorities for single industries or branches, and after the guilds and industrial societies concerned have had a hearing. The chambers of industry are further authorized to release apprentices in individual cases from the restrictions of the established period.[3] They may make the period dependent on individual efficiency or on attendance at a trade or improvement school.[4] Almost all chambers of industry make regulations concerning the period of apprenticeship.[5] Between the different chambers the regulations differ considerably. Of 68 chambers answering an inquiry of Coelsch, 9 made no regulations, 37 set the minimum at three and the maximum at four years, while 15 required three years uniformly.[6] The regulations seem to make the period too uniform, as between the several trades; and the chambers do not provide sufficiently for individual exceptions, the latter largely to avoid disputes with employers.[7] Coelsch thinks that the period averages too long, on the whole, and regards three to four years for the difficult and two to four for the easier trades as desirable.[8] Where the chambers of industry do not regulate the matter the guilds, free or compulsory, may do so with certain limitations.[9]

At the close of the period of apprenticeship the employer must furnish to the apprentice a certificate (Lehrzeugnis) stating the trade, length of the apprenticeship, the proficiency reached in knowledge and ability, and the conduct of the apprentice.[10] This is to be given whether the apprentice has done well or not, if he complete the apprenticeship, and whether he wishes it or not.[11] The local authorities are to freely certify to the certificate (merely attesting the employer's signature[12]). Where guilds or other representatives of employers exist, their apprentice letters (Lehrbriefe) take the place of the employer's certificates.[13]

Toward and at the close of his apprenticeship the apprentice, if he be in handwork, must be given opportunity by his employer to take the journeyman's examination (Gesellenprüfung).[14] This includes the making of a journeyman's piece. The law requires the handwork

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[1] R. G. O., sec. 127g, pp. 416–417.
[2] Coelsch, p. 112.
[3] R. G. O., sec. 130a, pp. 423–424.
[4] Coelsch, p. 57.
[5] Ibid., p. 57.
[6] Coelsch, pp. 57, 58.
[7] Ibid., pp. 59, 60.
[8] Ibid., pp. 60–62.
[9] Ibid., p. 62; R. G. O., sec. 81a, 3, p. 254.
[10] R. G. O., sec. 127c, p. 413.
[11] Coelsch, p. 81.
[12] Ibid., p. 80.
[13] R. G. O., sec. 127c, p. 413.
[14] R. G. O., sec. 131c, pp. 424–425.

apprentice to take this examination and his employer and master to hold him to it.[1] The chambers of industry in some regions, notably in Prussia and Bavaria, reiterate and try to enforce this requirement.[2] To have passed the examination involves advancement to the journeyman.[3] But as a matter of fact many handwork apprentices never take the examination, and though the chambers of industry would like to force them to do so, the existing law is in this respect too weak for the purpose. Factory apprentices need not take the examination, and very few do so. The celebrated Krupp Steel Works in Essen seek to have their apprentices take the examination, which they conduct themselves, for the sake of indicating the degrees of individual progress made, but they do not require this, nor advance the journeyman any the less if he omit it.[4] The State central authorities can require the journeyman's examination to be passed by all who receive certificates from teaching workshops, institutions for industrial education, or examination authorities whose certificate qualifies for Government service.[5]

An examination committee is to be established for every compulsory guild, but for free guilds only when a chamber of industry empowers them to hold examinations. So far as examinations in individual industries are not provided by guilds, institutions of instruction, or examining authorities, the chamber of industry shall arrange such examinations. The examining committee consists of a chairman, chosen by the chamber of industry, and at least two assistants, chosen as a rule for three years, and of whom one-half must be journeymen who have passed the examination.[6] The examination must show that the apprentice is able to command in his industry the necessary dexterity and ability with sufficient certainty, and also that he is informed concerning the value, preservation, and handling of the raw materials to be worked with, and the recognition of their good and bad qualities. The procedure of the examination is determined by the superior administrative authorities with the agreement of the chamber of industry. Bookkeeping may be required, in addition to the above-stated subjects.[7] For admission to the examination the apprentice must furnish his certificate of apprenticeship, and the certificate of attendance on an improvement or trade school, if such attendance was required of him. The examining committee note the passing of the examination on the apprenticeship certificate or apprenticeship letter.[8] Its chairman may appeal from the committee's decision to the chamber of industry.[9] The State central authorities may amend these regulations for the journeyman's examination, but may not lessen the requirements for passing it, as stated above.[10, 7]

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[1] R. G. O., sec. 131c, pp 427–429.
[2] Coelsch, pp. 239–240.
[3] Dr. Schoppacher Handwerkskammer Sekretär, Dusseldorf.
[4] An engineer of Fried. Krupp A. G.
[5] R. G. O., sec. 131, pp. 424–425.
[6] Ibid., sec. 131a, p. 426.
[7] Ibid., sec. 131b, pp. 426–427
[8] Ibid., sec. 131c, pp. 427–429.
[9] Ibid., sec.132, p. 429.
[10] Ibid., sec. 132a, p. 429

If an apprentice fail to pass the journeyman's examination, and the examining committee regard this as the fault of his employer, the apprentice may receive supplementary training from another employer, and the former employer be required to pay for his pecuniary loss.[1]

By national law (not industrial law) all those who pass a specified examination in any branch of handwork may obtain the one-year volunteer military certificate. This examination is chiefly theoretical and is so hard that a young man passing it at, for example, 18 years of age, must be as able as any master workman.[2] Naturally, but few take this examination.

If too many apprentices are held by an employer, so that their training is endangered, the lower administrative authorities may compel the dismissal of some, and limit the taking on of more than a certain number.[3] The dismissed apprentices, if their contracts be written, may demand an apprentice certificate and damages from their employer. The national senate (Bundesrat) may further regulate the maximum number of apprentices that may be held in establishments in a certain branch of industry. If such regulations are not made by the Bundesrath, they may be made by the several State central authorities. So far as these authorities have not legislated on the subject, the chambers of industry and guilds may, for those only who are under their charge (i. e., only handworkers, ordinarily), regulate the number of apprentices permitted.[4] In 1904, seven years after these provisions became law, neither the Bundesrat nor any State central authorities had made use of this regulative power.[5] Most of the chambers of industry have done so, however, some regulating all industries alike, and some making special regulations for special trades.[6] Many of these regulations seem too general and unsuited to varying conditions in different industries and with different employers.[7] How they have worked out in practice it is yet too soon to judge.[8] Few employers' associations or trades unions have sought to regulate the maximum number of apprentices in their trades.[9] In but few individual cases and in but few trades is there any excess of apprentices beyond what is desirable. The chamber of industry reports show a lack of journeymen and apprentices in the country and smaller cities, and the employment offices show a great lack of apprentices. So the attempts of the chambers of industry at regulation of the maximum number of apprentices seem to be on the whole not greatly needed.[10]

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[1] Handwerkskammer, Mannheim.
[2] Gustav Koepper, Sekretär, Handwerkskammer, Coblenz.
[3] R. G. O., sec. 128, pp. 417–418.
[4] Ibid., sec. 130, p. 423.
[5] Erhebungen a. a. O. S., in Coelsch, p. 119.
[6] Coelsch, pp. 128–130.
[7] Ibid., pp. 114, 127.
[8] Ibid., p. 130.
[9] Ibid., pp. 124–126.
[10] Ibid., pp. 119, 121, 123.

CHAPTER VIII.

THE SYSTEM OF INDUSTRIAL SCHOOLS.

German industrial schools took their rise in the Sunday afternoon and evening schools which had existed for several centuries in some parts of the country, dating back in one Baltic district as early as 1569.[1] They were used to supplement the imperfect general education of the working boys and girls. Attendance was made compulsory up to the age of 18 or even until marriage, but this provision was not enforced. The Sunday afternoon schools were at first chiefly concerned with religious teaching, but later they became general continuation schools,[2] concerned merely to reiterate the lessons taught in the common schools, with perhaps some slight advance. Still later more and more industrial and commercial training crept in, as also into the evening schools. The schools in their early days were far from successful on account of the lack of rooms in which to meet and of equipment, the ill-assorted nature of the pupils, and incompetency of the teachers. The industrializing of many of these schools improved matters somewhat, but the fact that throughout almost all Germany to-day strong attempts are being made to abolish evening and Sunday instruction in favor of day instruction, even for apprentices at work, indicates that the drawbacks were serious. Many of the Sunday schools gradually differentiated themselves into drawing, trade, commercial, mechanical, and art schools.[3]

In Prussia the medieval restrictions on trade and industry were abolished and industrial freedom (Gewerbefreiheit) attained in 1810, almost half a century previous to the change in the other German States.[4] Apprenticeship declined under industrial freedom and extensive competition, and the need of supplementary means of training was felt. Industrial improvement schools [2] were established, meeting evenings and Sundays at first, and these struggled on until the industrial law of the North German Union in 1869 gave localities the right to require compulsory attendance of all male workmen under 18 years of age.[5] In 1874 the final factor of success was added in annual Prussian appropriations and an official statement of principles for the conduct of such schools.

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[1] Sadler, M. E., editor: Continuation schools in England and Elsewhere. Manchester, 1907, ch. 8, p. 520.

[2] See preface.

[3] Spec. con. reps., vol. 33, p. 13.

[4] English Bd. of Educ. Educational Pamphlet No. 18. Compulsory Continuation Schools in Germany 1910, preface.

[5] Eng. Bd. Educ. Educ. Pamph. 18, preface, p. 3.

The States of central and south Germany, after the establishment of the German nation, felt the need of better cultural and civic training for their masses. They accordingly established general improvement schools, whose sessions were at first on Sunday and in the evenings.[1] Bavaria had had improvement schools with compulsory attendance for both boys and girls since 1803. The new schools did not succeed very well until the curricula were remodeled to center around the vocations of the pupils,[2] and the schools thus became primarily industrial schools. They have remained, however, more cultural and less technical than the Prussian schools.

From the early general Sunday and evening schools, and the industrial Sunday and evening schools which became differentiated from them, or were established in the light of their example, arose during the nineteenth century a great variety of industrial schools ranging from the improvement schools for youthful workers to the highly advanced and scientific technical high schools (Technische Hochschulen).[3] The majority of these industrial schools were established by private individuals, guilds, trade-unions, merchants' associations, and towns.[4] This fact, and the loosely united condition of the German States during most of this development, resulted in great diversity in the types of schools and much wasted effort. The nineteenth century was preeminently the period of experimentation in industrial schools. After the German nation was founded these schools, stimulated by the remarkable industrial and commercial development, went forward with leaps and bounds. But they are still essentially local in their control and support, and there is not as yet a unified system under central control.[5] Indeed, any *system* of industrial schools can be spoken of, as in the title of this chapter, only in the most general way, and for lack of a better term to indicate their general features and relations. So far as unity exists, it is due chiefly to the action of the National and of the State Governments, and to the forces of example and imitation, these latter working largely through the association of the German industrial school men (Verband deutscher Gewerbeschulmänner).[6]

All German children are required by law to attend the common school (Volkschule), or an accepted substitute, from the age of 6 or 7 to that of 14 years.[7] This common school is much like our own, differing chiefly in that religion is given a prominent place, and a slight fee is charged; it is divided into separate classes, though with equally good teachers, for pupils of different pecuniary rank (by charging different school fees); and like German schools in general, teaches fewer subjects than we do, but these with greater thoroughness. Some

[1] Sadler, p. 518.
[2] Eng. Bd. Educ. Educ. Pamph. 18, preface, pp. 3, 4.
[3] Spec. cons. reps., vol. 33, pp. 12–16.
[4] Ibid., p. 18.
[5] Ibid., pp. 12–16.
[6] Ibid., pp. 15, 134.
[7] With minor exceptions. Ibid., p. 5

common schools offer prevocational work, such as elementary drawing and work in paper, basketry, wood and iron (for boys), sewing and cooking (for girls).[1] At his tenth year, the parents of a boy in the common school must decide whether he is to continue his schooling beyond the compulsory attendance in that school. If so, he will leave the common schools at once and enter one of a number of types of school which offer themselves. If he is to be classically trained (with both Greek and Latin) he will enter the Progymnasium for its six-year or the Gymnasium for its nine-year course. If his training is to be semiclassical (including Latin, but not Greek), the Realprogymnasium offers him a six-year, and the Realgymnasium a nine-year course. If a liberal or modern training is desired, he will enter the Realschule for a six-year or the Ober-realschule for a nine-year course. Of these, in turn, all the nine-year courses admit to the appropriate faculties of the universities and to the technical and commercial high schools. The six-year courses are largely attended and completed, for the reason that their completion (or six years in a nine-year school) and the passage of an examination are rewarded by the one-year volunteer army certificate, by which the obligation to serve two years in the army is commuted to service for one year only, as a volunteer and with the chance to become an officer.[2] These courses are also prerequisite to entrance into many of the higher schools (höhere Schulen) of various sorts, commercial, technical, and engineering.

Of distinctly industrial schools there is a great body, with the scientific technical high schools at the summit. These schools are about the equivalent of our best colleges and university departments of engineering and other applied sciences. They train the technical leaders of industry. In them, probably more than in our universities, scientific investigation is given a very important place. Below them stand the middle technical and trade schools, of which there are many sorts: Mining schools (Bergschulen), building schools (Baugewerkschulen), textile schools (Textilschulen), schools of machinery (Maschinenbauschulen), and other schools for the metal industry, industrial art schools (Kunstgewerbliche Schulen), and other lesser groups.[3] These middle schools are of two main types, the higher and the lower.

The higher middle technical schools are designed to train leaders of industry, but with a less thorough preparation than that offered by the technical high schools. As a rule, they require the completion of a six-year general course, such as secures the one-year military certificate, and at least two years of practical work in the student's

[1] Rep. of the N. J. Commis. on Indus. Educ., 1909, p. 172.
[2] Spec. cons. reps., vol. 33, p. 8.
[3] Cf. *Gewerbliche Fachschulen in Preussen, hrsg. v. kgl. Landesgewerbeamt*, 1909.

trade.[1] They are probably the approximate equivalent of our technical schools, colleges, and universities of less exacting standards. In them about two-thirds of the engineers of Germany are trained, only about one-third coming from the technical high schools.[2]

The lower middle technical schools are designed chiefly for the training of practical working master tradesmen, technicians of lower grade, for supplementary training of foremen (who generally rise from the ranks), and the like. They require for entrance several years practice of the trade to be studied and throughout their work emphasize the practical side. In Prussia, the technical middle schools, higher and lower, are more fully developed than in south Germany. The industrial art schools are a special type, in that they train those engaged in many different trades and industries in the application of art and of design to their several trades.

Of all those engaged in industry, only a small minority attend any of the above-mentioned schools. Nor in these schools do we find such great differences from our own technical schools of various grades. It is in the industrial schools for the masses of workers that Germany excels and with respect to these schools that we have most to learn from her. These, the lower industrial schools, are of two main sorts, day trade schools and improvement schools. The relations of some of these schools to each other and to other schools are often exceedingly close. They may use the same building, have the same teachers, and the same management and support. Where there are but few workshop facilities available, or where the improvement schools utilize workshops also, instruction in the lower trade schools may differ but little from that of the improvement schools, except as to length. But throughout Germany the attendance at day trade schools is but a fraction of that at improvement schools. This is because few boys who go into industry as ordinary workmen can afford to study so long without earning, and because there is ordinarily no necessity for so doing by reason of the training to be received as an apprentice and in industrial improvement schools. There is also, as we shall see, serious question by many employers in industry as to the advisability of such schools for the training of the rank and file of workers. As a general rule, these lower day trade schools for workmen do not constitute substitutes for apprenticeship; but a few such schools, according to Dr. Kerschensteiner, for wrought-iron workers, machine builders, joiners, weavers, plumbers, etc., do take the place of apprenticeship.[3]

The type of school which supplies the great bulk of the training of the mass of workers, supplementary to the training derived from their

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[1] Kerschensteiner, Georg. Three Lectures on Vocational Training; delivered in America under the auspices of the Nat. Soc. Promot. Indus. Educ., 1911, p. 39.

[2] Spec. cons. reps., v. 33, p. 277.

[3] Kerschensteiner: Three Lectures, etc., p. 33.

work itself, is the industrial improvement school (gewerbliche Fortbildungsschule). In this school the majority of workers receive their first and only industrial training imparted by any school. German improvement schools are now of three forms: General, industrial, and commercial (allgemeine, gewerbliche, and kaufmännische). These schools, as we have seen above,[1] were originally all general schools and of a type which aimed merely to continue and perhaps slightly expand the common school training. Such schools are now becoming a less and less important part of all Fortbildungsschulen and are also adding new subjects to their curricula, as civics, hygiene, studies of transportation, etc. Their organization varies from place to place. In some important cities there is no such school, and such few general classes as are held are a part of the industrial improvement school. The recent great growth of the industrial schools is a striking fact. Those youths engaged in industry attend the industrial, and those in commerce, the commercial improvement school; whether attendance is compulsory or voluntary, youths naturally attend the schools organized for their type of occupation.

The relative importance of day trade schools, of improvement schools, and of the various types of improvement schools, is indicated by the following figures. There were in Germany, in 1906, about 130,000 pupils in general improvement schools; 206,000 in industrial improvement schools (including some called trade improvement schools—fachliche Fortbildungsschulen); 40,000 in (day) trade schools; 53,000 in commercial schools; 67,000 in agricultural schools; 71,000 in girls' general continuation schools; and 23,000 in girls' trade schools.[2]

By the National Industrial Law, established in 1891, compulsory attendance was provided for, and the improvement schools thus greatly prospered. This law provides as follows:

> The undertakers of industry must allow to their workers under 18 years of age who attend an institution for instruction recognized by the community authorities or by the State as an improvement school the necessary time for this purpose, as specified by the appropriate authorities. The instruction may be on Sunday only when the hours of instruction are so set that the pupils are not hindred by them from attending the chief religious service, or a service of their confession especially established for them with the consent of the religious authorities. * * * Institutions in which instruction in woman's hand and house work is given are improvement schools in the intention of these regulations.
>
> A community or a wider union of communities (Kommunalverbandes) may, by national statutory regulations, so far as regulations are not established by the separate States, require the attendance at an improvement school of male workers under 18 years, as well as of female commercial clerks (Handlungsgehilfen) and female apprentices under 18 years. In the same manner the necessary regulations may be made for the enforcing of this obligation. In special, regulations may be made by statutory

[1] Kerschensteiner: Three Lectures, etc., pp. 1-3. [2] Sadler: Continuation Schools, ch. 18, table ii.

provisions to insure a regular school attendance, as well as to regulate the duties of parents, guardians, and employers; these regulations and suitable deportment may be enforced in the improvement school. Those individuals are freed from the statutory obligation to attend an improvement school who attend a guild or other improvement or trade school, so far as the instruction of these schools is recognized by the higher administrative authorities as an adequate substitute for that of the general improvement schools.[1]

The several German States have reserved to themselves the full regulation of their school affairs and so the above national law has no compulsory force and is permissive only.[2] Great results have, notwithstanding, followed it; for in those States which have no law regulating improvement schools the national law, in conjunction with local ordinances, has in many localities provided compulsory attendance. The national law, and the compulsory attendance provided under it for some schools, has also served as an example to the States, and has stimulated them also to legislate for compulsory attendance. On the basis of the national law and local ordinance, where such local ordinance exists, employers must allow time for the school attendance even of those workers who attend voluntarily.[3] The national law further provides that in localities where a trade school recognized by the State or communal authorities exists the obligation of the employer to insure time to his youthful workers to attend a school recognized as an improvement school (as sec. 120 above) applies to such trade schools also.[4] The manager (Geschäftsinhaber) must hold his apprentices and journeymen under 18 years to attendance on the improvement and trade schools and must watch over their attendance. These provisions (in secs. 120 and 139c) are enforceable against employers or parents by fine of not to exceed 20 marks ($4.80), or in case of inability to pay, by imprisonment, not to exceed three days for each infringement.[5]

Almost all the States have legislated on the subject of the improvement schools, and their main requirements in 1909 are set forth in the accompanying table.

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[1] R. G. O., sec. 120, pp. 380–384.
[2] Baar, Ewald: *Die deutsche Fortbildungsschule im Jahre 1909, p. 1.*
[3] R. G. O., sec. 120, notes, p. 382. (Hoffman edition.)
[4] Ibid., sec. 139i, pp. 482–3.
[5] Ibid., sec. 150, 4. pp. 503–4.

German State laws on compulsory attendance at improvement schools (1909).[1]

	States, with approximate population (1905).	Minimum attendance compulsory for boys.	Minimum attendance compulsory for girls.	Remarks.
1	Prussia[2] (37,000,000).	.....	.....	In Posen and West Prussia, the minister of commerce and industry may make attendance compulsory.
2	Bavaria (6,500,000).	For 3 years, 2 or 3 hours a week, in Sunday school; or in improvement school, where the community so chooses.	Same as for boys.....	
3	Saxony (4,500,000.)	For 3 years, 2 or 3 hours a week.	Only by community action; then not over 2 years.	
4	Wurttemberg (2,300,000)	For 2 years, 2 hours a week, 40 weeks a year. If community be excused from establishment of an improvement school, then 3 years in Sunday school.	Same as for boys.....	Every community with 40 boys under 18 years in commerce and industry, must establish an industrial improvement school, and such boys must attend it for 3 years, 280 hours a year (may be 4 years for special trades).
5	Baden (2,000,000)	For 2 years, 2 hours a week.	For 1 year.....	A community may require compulsory attendance of both sexes through their 18th year at industrial or commercial school.
6	Hesse (1,200,000)	For 3 years, 4 hours a week, 4 or 5 months.	A community may establish an improvement school for girls.	
7	Mecklenburg-Schwerin[4]. (625,000)	In cities for handworker apprentices, through their apprenticeship.	.....	Industrial schools to have courses for 3 years or more, 8 hours a week.
8	Mecklenburg-Strelitz[4]... (103,000)	.....	.....	
9	Saxe-Weimar..... (388,000)	For 2 years, twice a week at least in winter; not over 6 hours a week.	A community may require attendance for 2 years up to 6 hours a week.	
10	Oldenburg[5] ..... (438,000)	.....	.....	
11	Brunswick[4]..... (485,000)	.....	.....	Attendance through compulsory term in which 18th birthday is reached. Compulsion may be established by the State, for improvement schools not public institutions, and single groups of industries, on motion of those concerned.
12	Saxe-Meiningen..... (269,000.)	For 2 years, 4 hours a week.	Same as for boys.....	
13	Saxe-Altenburg..... (206,000.)	For 2 years; full year, 2 hours a week, or 4 or 5 months, 4 hours a week.	A community may eslish an improvement school for girls.	

[1] Compiled from data in Baar, pp. 3–82.
[2] No law, except for miners. National industrial law thus in force for miners (secs. 120, 139i, 142, 150). Section 120 permits localities to require attendance.
[3] State approval necessary to establishment of local compulsion.
[4] Law reiterates national industrial law.
[5] No law. National industrial law thus in force.

German State laws on compulsory attendance at improvement schools (1909)—Continued.

	States, with approximate population (1905).	Minimum attendance compulsory for boys.	Minimum attendance compulsory for girls.	Remarks.
14	Saxe-Coburg-Gotha (242,000.)	Coburg: For 2 years, winter months, 2 hours a week. Sachsen - Gotha: For 3 years, 2 hours a week through the year, or 4 hours a week for 4 or 5 months.	Coburg: A community may require compulsory attendance for 2 years. Sachsen-Gotha: A community may require compulsory attendance.	
15	Anhalt [1] (328,000.)	.....	.....	Similar to law of Prussia.
16	Schwartzburg - Sondershausen. (85,000.)	For 2 years, 4 hours a week (in special cases, 2 hours), 4 to 6 months.	A community may establish an improvement school for girls and require attendance (compulsion may be limited to those in industry).	
17	Schwarzburg - Rudostadt.[2] (97,000.)	.....	.....	A community may require attendance for 2 or 3 years.
18	Reusz (senior line [3]) (70,000.)	.....	.....	
19	Reusz, (junior line) (145,000.)	If superior school authorities so decide, for 2 years, 2 hours a week through the year, or 4 hours a week for 6 months.	A community may establish an improvement school for girls.	
20	Lippe [2] (145,000.)	.....	.....	
21	Schaumburg-Lippe [3] (45,000.)	.....	.....	
22	Waldeck (59,000.)	For 2 years, 4 hours a week.	.....	
23	Lübeck (106,000.)	For all apprentices through their apprenticeship; all the year 8 hours a week, or winter months alone 12 hours a week. For commercial apprentices and clerks through their eighteenth year.	.....	
24	Bremen (263,000.)	For 3 years (no minimum; 4 to 6 hours a week maximum); unskilled workers excepted.	.....	
25	Hamburg [3] (875,000.)	.....	.....	
26	Alsace-Lorraine [3] (1,810,000.)	.....	.....	

[1] No law except for miners; national industrial law thus in force for miners (secs. 120, 139*i*, 142, 150). Section 120 permits localities to require attendance.
[2] Law reiterates national industrial law.
[3] No law. National industrial law thus in force.

Where no law on the subject exists the provisions of the National Industrial Law, as stated above, permit compulsory attendance to be required by any community wishing it. Some States have reiterated the substance of the permission of the national law. Bavaria, Saxony, Wurttemberg, Baden, Hesse, Saxe-Weimar, Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg-Gotha, Schwarzburg-Sondershausen,

and Waldeck require all boys in industry or commerce, and not otherwise as well educated, to attend improvement school (in some few cases Sunday schools) for two to three years after their compulsory attendance at common school has ended; Mecklenburg-Schwerin, Reuss Jungere Linie, Lubeck, and Bremen make similar but variously qualified requirements. Only a few States require girls to attend improvement (or Sunday) schools—Bavaria, Wurttemberg, Baden, and Saxe-Meiningen (Sadler says also Waldeck and parts of Prussia).[1] As a rule, the compulsion is for attendance on a general improvement school, though sometimes on an industrial or commercial school. Those are excepted from the requirement who are receiving at least an equivalent education otherwise. Attendance at a school approved as a substitute for the improvement school frees ordinarily from the obligation to attend that school. For a summarized statement of the extent of improvement schools let us take that of Dr. Kerschensteiner:

> In south Germany there is no city or town, however small, without one such school at least for all boys. In north Germany the great industrial town of Essen is the only larger town in which such a school is wanting.[2]

The industrial improvement schools are generally not to be called trade schools.[3] Few of them, the country through, have many workshops, and none or practically none of them attempt to act as substitutes for apprenticeship. They are technical schools, seeking to impart the "why" and "how" of the trades, or part technical, part general schools. We shall see more fully in the succeeding chapters of what nature these schools are and what results they are accomplishing. Throughout, let it not be forgotten that these schools merely supplement, and aim merely to supplement, the training received in apprenticeship, even though this service be highly important.

After the industrial schools of various types had been established the State followed the example of the individuals and groups who had founded them and founded or aided in the founding of similar schools and obtained year by year more and more control over all these schools. This was largely done by means of providing subsidies for the industrial schools, to obtain which they must meet certain requirements with regard to grade and kind of work and the like, and submit to certain supervision. Inspectors enforce the State requirements. Thus the State tends to unify and standardize these schools, as well as to add greatly to their available funds. Certain modes of support are typical, though particular arrangements vary greatly from place

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[1] Sadler, ch. 18, p. 517.

[2] Kerschensteiner: Three Lectures, etc., p. 9. Essen has had a voluntary industrial improvement school since 1845. In 1910, at request of the guilds, this was made a compulsory school.

[3] Certainly not in the American sense of the term; see preface.

to place and school to school. Distinctly local schools are usually supported chiefly by the community with aid from State subsidies (except, usually, in case of improvement schools), while guilds, associations, and unions often contribute lesser amounts (though in some cases a large share). The higher schools receive usually large State support on account of their service to a wide district. The boards of directors include in most cases representatives of the industries concerned, or some of them (usually guild members), city officials, and representatives of any other contributors.

The State administration and supervision has been vested both under departments or ministries of education and those for commerce and industry. The result of many experiments and repeated changes is in most cases the supervision of the industrial schools by a different body from that set over the other schools and one representing the interests of industry. Only thus, it was found, could the industrial schools be kept from becoming academic, true to their name and purpose, and be made practical and adjusted to the changing needs of industry. Cooperation, in the form of assistance and advice, of the educational authorities was found essential, however, to efficient operation of the schools, and this is now usual.[1]

Industrial schools for girls and women are still greatly lacking. Housekeeping schools and schools training for women's industries, as millinery, dressmaking, etc., and for domestic service, are found in many places. Commercial schools are one of the most numerous classes of schools for girls, while general improvement schools exist in many places. The present tendencies toward more improvement schools for girls are directed more toward the establishment of commercial than of industrial schools. There is probably to-day greater need in Germany for industrial schools for girls and appropriate compulsory attendance on them than for any other advance in industrial education.

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[1] Spec. cons. reps., vol. 33, pp. 137, 138; Rep. N. J. Commis. Indus. Educ., p. 175; Baar, pp. 3–82.

CHAPTER IX.

THE INDUSTRIAL SCHOOLS OF HAMBURG.

Hamburg, a city of some 802,000 population (1905) and one of the chief ports of the world, is situated near the mouth of the Elbe River. Originally a member of the Hanse union, the city is now one of the constitutent States of the Empire, as the proud name of *freie und Hansa Stadt Hamburg* gives evidence. Primarily commercial, and, because of its location and tariff-free portion of the harbor, a great port for transshipment; it is now beginning also to see the growth of a thriving industrial life. The chief groups of industries, with approximate numbers of workers engaged in each, are: Machine industries (22,000); foodstuffs (8,900); metal working (6,700) (machine and metal working industries include about 10,000 engaged in shipbuilding); wood working (6,600); clothing (5,800); book printing and type casting (4,400); leather (4,200); fine lingerie (2,900); cleaning industries (2,900); forest products, fats, soaps, oils, etc. (2,700); building (2,500); chemical industries (2,200); painting, lacquering, etc. (2,000).[1]

Until recent years there were a number of guild industrial schools in Hamburg, and a few of these still survive, the guilds concerned requiring and enforcing the attendance of the apprentices under them. But for the most part, as the city has extended its activities in the field of industrial education, the guild schools have been taken over by the city and now constitute a part of the public system of industrial schools. This change has been satisfactory to the guilds as to all others concerned.[2]

The chamber of industry was established in 1903 and still continues theoretical master courses (Meister-kurse).[3] There were in 1910 13 such courses for different industries and groups, each including about 30 independent handworkers and journeymen (who must be 24 years old). The purpose of these courses in the improvement of handworkers in general, and especially the preparation of young handworkers for the master's examination (Meisterprüfung). The courses meet ordinarily week-day evenings from 8 to 10 o'clock, and the whole course includes at least 40 hours of class work. The teachers are taken from higher schools, and thus are above the ordinary grade. They are assigned classes in related industries so

[1] Total 84,374. *Yahresbericht der Hamburgischen Gewerbekammer für 1910,* pp. 76–81. Dr. Rudolf Görnandt, a director of the Hamburg Gewerbekammer.

[2] Yahresbericht Gewerbekammer, 1910. Anhang, pp. 6–40.

far as possible, that each may adapt himself to the special needs of that group of industries. The subjects treated are industrial bookkeeping, notes, bills of exchange, etc. (Wechseellehre), industrial calculation (of costs, etc.), and law (the chief provisions of the industrial law, of the industrial insurance laws, of the law of associations, and of other laws especially applicable to handworkers). The attendance on these courses in 1910 was 390, from 15 different industries (with only 4 per cent of absences).[1]

Since 1906 the chamber of industry has established also practical master courses.[2] The purpose of these courses is not the training of journeymen to become masters, nor any elementary training at all, but rather the education and practice of masters in the latest developments in their respective industries. This includes training in the use and desirability of the most modern machines, simple investigations of materials, technical, scientific, and industrial art lectures and practice to give an up-to-date viewpoint, and the like. There were 25 courses for 14 industries in 1910. A few titles of classes are: Concrete construction (2 classes), investigation of baker's materials, large scale production of shoes, automatic welding and cutting of metals (4 classes). These classes usually meet Sunday morning from 8 to 12, or week-day evenings from 6 to 11. The total number of class hours averages about 32 for each course. The teachers are engineers, architects, chemists, painters, and other experts. The attendance in 1910 was 295, the men ranging in age from 25 to 60, and averaging perhaps 35 to 42 years.[3] The interest of the participants was very great, promising important results on industry.

The city of Hamburg has what may truly be called a system of industrial schools, fairly comprehensive in its scope. It includes the following:

(1) A building trades school (Baugewerkschule) with department for underground construction.

(2) A technikum or technical school, including (*a*) a higher machine builder's school (höhere Maschinenbauschule), (*b*) a higher school for construction of ship machines (höhere Schule für Schiffsmaschinenbau), (*c*) a higher shipbuilder's school (höhere Schiffbauschule), (*d*) a higher electrical school (höhere Schule für Elektrotechnik), and (*e*) a school for ship's engineers (Schiffingenieurschule).

(3) An industrial art school (Kunstgewerbeschule).

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[1] The courses cost about 4,108.77 marks ($986.34), of which about half (2,057 m.) came from fees of 5 marks per participant. Yahrebericht Gewerbekammer, 1910, Anhang, p. 39.

[2] Yahresbericht Gewerbekammer, 1910, Anhang, pp. 41–74.

[3] The total cost in 1910 was 14,248.79 marks ($3,419.67), of which 2,114 marks ($507.36) was met by fees. The balance was paid by the chamber of industry from funds furnished by the city for the promotion of industry. The average costs (in excess of fees) were: For each course, $116.49; for each participant, $9.87; for each class hour, $3.65. Yahresbericht Gewerbekammer, 1910, Anhang, p. 73, 74.

(4) A wagon builders' school (Wagenbauschule).
(5) A day industrial school.
(6) Eleven evening and Sunday industrial schools.
(7) Eight commercial improvement schools.
(8) An improvement school for girl and women clerks.

I visited all of the above schools except the last 2, and including 2 of the 11 evening and Sunday schools.

The building trades school is a day technical school of middle grade, preparing the graduates of its two and one-half year courses for technical positions, or in connection with practical training, for positions as master builders. It has no shops; drawing, mathematics, and design are prominent in its curricula. Many of its students attend only during the winter half year, working at their trade during the summer, as shown by the attendance of 146 students in summer term 1909, but 405 in the winter term of 1909–10.[1]

The technikum is a type of the middle technical schools which train about two-thirds of the German engineers.[2] For entrance [3] the military volunteer certificate must be possessed, involving the completion of six years' work in a secondary school,[4] and two years of practical work; or certain other equivalents. The subjects taught are similar to those in technical colleges in the United States. The courses last but two years; but since the students are allowed only the short vacations usual in industry, since they have all had practical experience, and thus are given no shopwork, and since their practical training enables them to grasp the theoretical with the minimum of difficulty, this period proves sufficient to turn out well-equipped men. During the school year 1909–10 an average of 326 students attended the technikum. The cost of this school to the city, on account of the high salaries of the necessarily very well-equipped teachers, is the greatest of all the city schools.[5] The graduates are quite uniformly able to secure good positions.

The industrial art school seeks, in its day classes, to train in drawing, painting, sculpturing, and the like, and in industrial design, primarily those persons engaged in industry who have completed their apprenticeship, and also apprentices. There are both day and evening classes. Some classes adapted to special trades are those in interior architecture, glass painting, etching, bookbinding, photography, embroidery, and weaving. Much of the students' work was excellent, especially the artistic hand bookbinding. That it is practical is attested by their ability to secure good positions.

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[1] *Programm der Staatlichen Baugewerkschule für Hochbau und Tiefbau zu Hamburg;* and *Bericht über das Schulyahr 1909–10.*

[2] *Staatliches Technikum Hamburg: Programm;* and *Bericht über das Schulyahr 1909–10.*

[3] Except for the Ship Engineer's School.

[4] Cf. ch. 8, p. 79.

[5] $500 to $600 per student per year. Herr Proben, Technikum.

The wagon builder's school is a small day school, in which about a score of journeymen and master wagon builders receive technical instruction for a year each. They are thus enabled to become designers, masters, and foremen. The trade instruction is imparted by a master wagon builder; while instructors not masters in the trade teach free-hand drawing and other less specialized subjects. The school has now been in existence for 25 years, and according to Herr Behncke, its head teacher, is so successful that in the fall of 1911 a similar school for smiths was to be opened.[1]

The day industrial school and chief Sunday and evening industrial school occupy the same large building, centrally located, where are also the technikum, building trades school, and industrial art museum Classes are held during the daytime, evenings, and Sunday morning. These two schools consist of 14 trade schools for 20 trades, attendance at which is compulsory for apprentices of guild members, and of classes for voluntary attendance. The trade schools, in the winter term 1909–10, included 2,381 students, chiefly apprentices, while the voluntary classes included 1,618 students (1,186 apprentices, 287 journeymen, and 145 others). The subjects taught are almost all technical, and there are but few workshops. Trade drawing is taught separately for 17 trades, and similar specialization of other subjects is the rule. The number of hours of instruction per week varies from $5\frac{1}{2}$ to over 9 for voluntary pupils, and 3 to 18 (the latter for painters and lacquerers), with an average of about 8 for the compulsory trade schools.[2]

The so-called small industrial schools are scattered through the city in 10 common-school buildings.[3] They include evening and Sunday schools with special courses for the several trades; apprentice trade schools, attendance on which is enforced on their apprentices by guilds and guild members concerned; and incidentally, classes for common-school boys in free-hand geometrical and projective drawing. A total of 3,560 pupils attend all these schools (winter, 1909–10). Only apprentices and other youthful workers are accepted as pupils, except in the drawing classes for school boys.

The evening and Sunday schools are attended voluntarily and offer six hours of instruction weekly, from 7 to 9 one evening a week, and from 8.30 to 12.30 Sunday morning. The subjects offered are: German, arithmetic, bookkeeping and law, writing, study of geometrical forms, algebra, geometry, trigonometry, free-hand drawing, geometrical drawing and projection, and trade drawing for builders, machine builders, electricians, wrought-iron workers (Schlosser)[4],

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[1] *Lehrplan der Staatlichen Wagenbauschule zu Hamburg;* and *Lehrplan der Deutschen Schmiedeschule zu Hamburg.*

[2] *Staatliche Hauptgewerbeschule, Tagesgewerbeschule, und Wagenbauschule zu Hamburg. Bericht, 1909–10ä.*

[3] *Staatliche Gewerbeschulen Bismarkstrasse usw. zu Hamburg. Bericht, 1909–10.*

[4] A hard word to translate. Not "locksmith" as ordinarily rendered, but representing one engaged in a roughly defined range of operations, between the smith and the machinist, concerned perhaps as much with wrought-iron as with anything else.

plumbers, and machinists. What these smaller schools lack, their pupils can supplement by added work in the chief industrial schools (161 did so in 1909–10).

The trade schools, like those in the chief industrial school, have been established only when the cooperation of the chamber of industry and of the guild or guilds concerned could be secured. The school authorities and the guilds agreed on a curriculum, and the guilds enforce attendance of their apprentices throughout their apprenticeship, being aided in this by the chamber of industry.[1] Eight hours of instruction are given weekly; four hours on Sunday morning, and four hours on two evenings from 6 to 8 (for wrought-iron workers), or on one afternoon from 3 to 7 (for plumbers). There are two of these schools, one for wrought-iron workers (Schlosser) including 447 pupils (in winter 1909–10) in four different buildings, and one for plumbers and related trades, having 686 pupils in the one building. The subjects taught in the ironworkers' school are drawing, study of industry (Gewerbekunde), arithmetic, business composition, bookkeeping, and civics (Bürgerkunde), all taught with special reference to the trade.

The curriculum of the apprentice trade school of the plumbers and related trades, which is typical of that of the other trade schools, includes four years of work, so arranged, however, as to meet the needs of those who complete apprenticeship in three years and thus may no longer be required to attend. The scheme is as follows:

Curriculum of the apprentice trade school of the plumbers and related trades.

Subjects.	Number of hours weekly.			
	First year.	Second year.	Third year.	Fourth year.
Industrial drawing	4	4	4	5
Study of industry	1	1	2	1
Industrial arithmetic	2	2	.....	1
Business composition	1	1	.....	1
Bookkeeping and calculation	.....	.....	1	.....
Civics	.....	.....	1	.....

The drawing so prominent in the course includes geometrical drawing and projection the first year, and after that trade drawing exclusively. The study of industry includes a great variety of data calculated to orient the apprentice in his work and general place in life, such as materials, processes, systems of installation of gas, water, electricity, etc., and a little industrial law. The industrial arithmetic is entirely concerned with practical problems, as the reckoning of wages, costs of industrial insurance, cost estimates, and final reckoning of costs, purchase of materials, notes, and exchange.

[1] The Hamburg Gewerbekammer, unlike most in Germany, supervises factories as well as handwork industries.

Business composition gives practice in writing letters or forms for various business purposes, in which the practical end is given first place. The bookkeeping includes a little cost accounting. Finally, the civics class adds a little to the minimum data on industrial law and the like in the study of industry, in familiarizing the apprentices with certain laws, branches of government, industrial and public duties. There are no workshops in this school, though numerous models aid in its instruction.[1]

The instruction is partly by professional teachers, partly by masters in the trades concerned. The latter give all the trade drawing. The teachers are paid only 3 marks (72 cents) per hour class in the day-time, and twice this amount in the evening.

Attendance on any of these schools is not compulsory by either State or other public authority. Attempts to require attendance by State action have so far [2] failed. According to section 120 of the National Industrial Law,[3] and a State law of Hamburg of October 7, 1864, all employers are required to allow their apprentices to attend an industrial school at least six hours a week, if they wish to do so. These laws are not of much force and have but little effect on the attendance. At most they but require the employer to free his apprentices from other duties one evening and Sunday morning, which most would do in any case. Compulsory attendance in Hamburg, so far as it exists, depends solely on guild action, spurred on by the chamber of industry.

About 70 per cent of the Hamburg guilds are compulsory.[4] These guilds require all their apprentices to attend the evening and Sunday or other industrial schools throughout their apprenticeship, or so long as the course lasts. This compulsion is effectively enforced through the several masters, members of the guilds in question, by means of fines imposed by the guild on masters whose apprentices are irregular in attendance or fail to attend the school. The chamber of industry has also exerted pressure on negligent masters successfully. The voluntary guilds seek likewise to enforce attendance in their respective industries, but can do so only for their own members. Industrial enterprises aggregating over 35,000 masters and workers have no manner of compulsion on attendance of their apprentices.[5] This is the weak spot of the system, and one that will probably be changed in time in favor of city (State) compulsion.

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[1] This curriculum was obtained from a manuscript furnished by Herr Schulinspektor August Kasten. The school to which it refers was inspected in many classes by the author, under his guidance.

[2] Latest data, 1911.

[3] Cf. ch. 8, p. 82.

[4] In 1910 there were 8,694 masters and 34,116 masters and workers together in and under compulsory guilds; 1,335 masters and 14,691 masters and workers together in and under free guilds. Gewerbekammer Yahresbericht, 1910, p. 65.

[5] Gewerbekammer Yahresbericht, 1910; worked out from figures on pp. 65, 81.

Some of those apprentices and other youthful workers not required to attend do so voluntarily. Thus the machine builders' guild is free, but every apprentice in this trade attends the evening industrial school, because the mechanical drawing there taught is absolutely necessary to him in his work. Another incentive to voluntary attendance on these schools is the need of the apprentices for the training there received, if they are to pass the journeyman's examination, or later the master's examination. These examinations, which are both practical and theoretical, can in most cases be passed only by those apprentices and journeymen who have attended these schools. In 1910, 483 apprentices passed the journeyman's examination and 167 journeymen the master's examination.[1]

Most apprentices in Hamburg attend an industrial school voluntarily or otherwise; so there can hardly be said to be a special demand for their students. The employers are able to obtain a larger number of skilled workers than if there were no industrial schools in the city. The skilled workers available for industrial purposes are steadily increasing in numbers, and in those industries where skill is demanded a steadily growing proportion of workers is found who have passed the master's examination.[2] The industrial schools are found to stimulate the interest of the boys in their work. The chamber of industry states of the iron workers' classes that they have had a very beneficial influence on the journeyman's examination piece,[3] which indicates principally practical, but also theoretical, ability. This influence was probably exerted chiefly through the drawing classes.

School products are very seldom sold, both because not much work is produced, which is of such sort and quality as to be readily marketable, and because the schools have no selling facilities. Even where these conditions are absent, the schools would sell but few products for fear of competing with and antagonizing the guilds.

None of these schools unduly increase the number entering a given industry, because none of them accept students who have not worked in the industry in question or are not at the time so working. Teachers who attend these schools as students and school boys in preliminary classes are excepted from this rule. The schools do not shorten the period of apprenticeship, for this is determined by the chamber of industry for all trades, according to the national industrial law on apprenticeship. The usual period of apprenticeship in Hamburg is four years. A shorter period is allowed in any individual case only by permission of the chamber of industry and usually on the payment by the apprentice to his employer of a specified sum instead of wages being paid him. This payment is made because the employ-

[1] Gewerbekammer Yahresbericht, 1910; worked out from figures on pp. 61, 62.

[2] Dr. Görnandt, Gewerbekammer.

[3] Gewerkekammer Yahresbericht, 1910. Anhang, p. 5.

ers say the boy is not worth much the first two or three years and that their profit occurs chiefly in his last (usually fourth) year of service. Thus the monetary difference to the boy may be in a typical case equal to two and a half (or three) marks a week foregone the first year, three (or four) the second, and four (or five) the third, or 475 (or 600) marks total, plus 150 marks paid to the master, or 625 (or 750) marks total ($150 or $180).[1] Such shortening of apprenticeship usually occurs in the case of a boy whose parents have money enough to advance him thus more rapidly, especially if he has continued in school beyond the common school.

All classes of people in Hamburg are, as a whole, favorable to the industrial schools; teachers and directors of the regular schools, employers and guilds, unions and workmen, parents and pupils. The parents of all classes are most heartily in favor of them, and it is from the parents that the greatest demand for their establishment has come. Not all individual employers are favorable, but as a class they are so in each trade and in all trades collectively. The consensus of opinion in the entire city is decidedly favorable to the industrial schools.

Their expense is not felt as a heavy burden by the taxpayers, but as money well spent, though the schools are expensive. The city (State) pays all the expenses of these schools, outside of the small sums received for tuition from pupils. The evening and Sunday schools require 10 marks ($2.40) tuition a half year, the higher schools naturally more (the technikum 72 marks ($17.28) a half year). Neither guilds nor employers aid the schools financially; nor do they supply materials or models, as in some other German cities. In some cases individual masters serve without pay on the school boards.

The modern tendency to specialization in all industries, with its resulting narrowing shop training, is met in some degree by the industrial schools in this manner: The schools teach somewhat of all branches of each trade in the school for that trade, attended by all apprentices who learn but a branch of the trade in their work. Thus they are prepared to understand and later supervise work involving all the branches, even though they be skilled in but a single branch.

In those industries where success depends most largely on the technical training, as in those where the artistic element enters largely (decorating, cabinetmaking, etc.), the employers are most decidedly in favor of industrial schools, and are willing to release their apprentices to attend them in the daytime, during working hours, considering the sacrifice well worth while, in view of the greater skill secured. In the most highly organized industries, however, such as shipbuilding (even though in some of these, as machine and ship building, industrial education such as provided in these schools is of

[1] Herr Schulinspektor A. Kasten.

great value) the employers are as yet usually unwilling to release their apprentices during working hours to attend industrial school. They claim that this disorganizes their factories too much, and that the result is thus not worth the sacrifice.

In the handwork industries also, wherever the benefit from industrial education is not great (chiefly the less skilled handwork), the employers usually consider the sacrifice not worth while and are unwilling to release their apprentices to attend industrial school during working hours. To sum up, the upper and lower grades of industries, in point of skill required and complexity of organization, desire industrial education for their apprentices, but, in the main, only during the apprentice's own time, while the middle grades (including some in the highest grade of skill, but not highest in organization) desire this education for their apprentices enough to release them for it during working hours, when they can receive it to the best advantage.

To look back over Hamburg's industrial schools, we see that she has excellent higher schools, and good lower schools. These lower schools are well adapted to the needs of industry, but greatly need the requirement of compulsory attendance to enable them both to reach the minority, at present neglected, and to require daylight attendance in all possible classes. Compulsory attendance, accepted and successful through large portions of Germany, will probably in time be adopted also in Hamburg, and will add to the efficiency of her already good system of industrial schools.

CHAPTER X.

THE INDUSTRIAL SCHOOLS OF BERLIN.

Berlin, the capital of the German Empire, had in 1905 a population of about two millions, which in 1912 had been increased by the annexation of suburbs to three and one-half millions. The city is thoroughly modern and cosmopolitan. Over half of her population are engaged in industries embracing almost all branches. Among these the metal-working industries are very important, especially the manufacture of machinery and electrical goods. The breweries rival those of Munich in extent.

The city possesses an elaborate system of industrial schools, many of them having attained their present form in comparatively recent years. In 1905 the administration of all the industrial and improvement schools was placed under a newly established commission for the city trade and improvement schools.[1] The city system of industrial schools includes: (1) Voluntary improvement schools (chiefly commercial); (2) compulsory improvement schools; (3) trade schools for apprentices; and (4) middle (höhere) trade schools. The great Royal Technical High School is located in Charlottenburg, a suburb continuous with Berlin. This great institution, specializing in research in applied science, and attended in 1909-10 by some 5,300 students from all parts of the civilized world, represents, with its fellows in other parts of Germany, the pinnacle of German industrial education. I am concerned chiefly with the foundations, however, and so turn to the humble, but no less important, improvement schools.

The voluntary improvement schools, of which there were 33 in 1909–10, are open, some to boys, some to girls, and some to those of both sexes. They are chiefly commercial in nature, and some wholly so. A few have industrial and housekeeping courses for girls, such as design drawing for tailors and for lingerie sewing, repairing, ironing, machine sewing and machine embroidery, tailoring, and millinery. Attendance on these voluntary improvement schools does not free from the obligation to attend a compulsory improvement school, where such obligation exists.

The compulsory improvement schools (Pflichtfortbildungsschulen) are 10 in number and have their headquarters in as many chief buildings scattered through the city, though spreading over freely into the common school and other buildings where necessary. Some of these schools, as also some of the voluntary improvement schools,

[1] *Die Deputation für die städtischen Fach- und Fortbildungsschulen.*

were once guild schools, since taken over by the city. Others have been city schools since the year 1799, though not becoming specialized as industrial and commercial schools until the period beginning in 1873. The last stage in their development was the requirement in 1905 by city ordinance, passed under the permissive provision of the National Industrial Law,[1] of attendance of all male industrial and commercial workers [2] on the compulsory improvement school, from the time of their release from common school until their seventeenth year.[3] As stated in the table in chapter 8, pages 83 and 84, throughout most of Prussia attendance on improvement schools is compulsory only by local ordinance. The Landtag had in 1911 a bill under consideration to require compulsory attendance throughout the State, in towns of 10,000 or larger population as well as in cities.

The compulsory improvement school must furnish instruction and require attendance at least four hours a week, but not over six. The classes for unskilled workers extend through four hours for skilled workers, and for boys in commercial work through six hours weekly. The hours set are usually in afternoon or evening though sometimes in the morning, and never later than 8 in the evening. Some classes of skilled workers meet twice a week for three hours at a stretch, some once for six hours. The classes for unskilled workers are usually in the evening.

The subjects of instruction are three: German, arithmetic, and drawing. There are no workshops in these schools. The pupils, all of whom are apprentices or unskilled boy workers, are grouped in classes according to their trades. The unskilled workers are grouped together and receive instruction more general in nature than that given to the apprentices. Their numbers are about one-third of the whole enrollment. Each of the 10 schools has classes for certain groups of trades. Thus the school which I visited [4] had 14 classes for metal workers, including 8 for wrought-iron workers, 5 for engravers and die sinkers, and 1 for molders. It had 42 classes for the art industries, including 10 for engravers, 9 for braziers, 13 for lithographers, etc., and 10 for bookbinders. It also had 12 classes for the unskilled workers, not separated closely according to their occupation. The total number of pupils in this school in the winter of 1909–10 was 2,940.[5] Many of the commoner trades have classes in a number of different buildings or in almost all. Where there are but a few apprentices of a trade in a district, classes are formed of

[1] R. G. O., sec. 120; cf. ch. 8, p. 85.

[2] With minor exceptions.

[3] Der gegenwärtige Zustand und die Nächsten Aufgaben des Berliner Fortbildungsschulwesens. Stadtschulrat Dr. Carl Michaelis, 1911. Also: Übersicht über das Fach- und Fortbildungsschulwesen der Stadt Berlin, 1909–1910, pp. 61–65.

[4] Of the second school district.

[5] Übersicht, pp. 69–71.

those in related trades, or related branches of a trade. Those in commerce are usually in ungrouped classes, though there are some classes for certain branches, as for those in businesses selling iron products.

The compulsory improvement schools of the whole city had in May, 1909, separate classes for the following trades and groups of trades [1] (the number of classes of all grades indicated after each trade): In the building trades, 82—including masons, plasterers, and roofers (15); oven makers (3); woodworkers (45); painters (8); glaziers (6); stonemasons (5). Among metal workers, 234—including in common classes (57); ironworkers (60); machine builders (42); mechanicians (57); plumbers (11); molders (7). Of the art trades, 89; made up of classes in common (7); engravers and chasers (12); brass founders (10); lithographers (15); those in bookmaking industries (12); photographers (3); gold workers (5); tapestrers (15); sculptors (6); lacquerers (4). In clothing industries, 31; including tailors (21); furriers (4) shoemakers and saddlers (6). In the food industries, 41; constituted by bakers (23); confectioners (3); waiters and cooks (15). Of barbers and hairdressers, 15; consisting of classes in common (12); wigmakers (3). Of commercial workers, 158; made up of classes in common (149); druggists (4); iron goods dealers (5). Of unskilled workers, 335, all in classes in common; and in certain miscellaneous trades, 17; including dentists (4), musicians (2), and pattern makers (3). The total number of different sorts of classes was 39, practically all of these having a class or classes for each of the three successive years of the course. The total number of separate classes was exactly 1,000, and the average number of pupils to a class was 31.14.

The German taught is identical with study of industry (Gewerbekunde), which means that in each class the teacher instructs the apprentices in technical, legal, civic, and other matters pertaining to the trade concerned, incidentally improving their oral expression. The students then write in their note books from memory an account of the subject just treated, and the teacher thus is able to correct their written expression. In some few classes, where the need is greatest, a little physics is taught by lecture and demonstration under the name of German or study of industry.

The arithmetic is a continuation of that of the common school, but taught with special reference to each trade or group of trades. The drawing is partly free hand, partly mechanical, and is also specialized to meet the special needs of the several trades. The type of instruction in general, and the ground covered, shows clearly the origin of these schools as variations from the older general continuation schools, whose function was to conserve and repeat the training of the common school, and if might be, to add slightly to it. As a con-

[1] Übersicht, pp. 96–99.

cession or adaptation to practical needs, the German and arithmetic were specialized, and applied to industrial needs, and drawing was introduced.

The teachers are most of them professional teachers, selected from the best in the common schools. Some classes, especially drawing, are taught by practicing masters or journeymen, who must (as elsewhere throughout Prussia) attend a short pedagogical course before they begin to teach. There is some difference of opinion between the school authorities and the masters, as represented in the chamber of industry, as to the proportion of teachers in these schools who are professional teachers and tradesmen, respectively. The school directors tend to exaggerate the number of practical men; the masters to underestimate their number. In 1909–10 there were 732 teachers in these schools, of whom 19 were artists, 11 were masters in handwork, and 69 were engineers, architects, technicians, and the like. The remaining 633 were professional teachers of different grades.[1] The masters, however, are not satisfied with the number of practical men teaching, nor with the extent to which the instruction is practical and adapted to the needs of industry (fachlich). They also wish more subdivision of classes, to meet the needs of specialized trades or branches of trades. In considering these criticisms, it must be borne in mind that the compulsory schools have been in existence only since 1905, and that they are being adapted steadily closer and closer to the needs of industry, though they have yet much to attain. The drawings exhibited show that much very good work has been done in the schools.

In the winter term 1909–10, 32,320 pupils attended these compulsory schools, and in 1910–11 upward of 36,000. The costs, paid entirely by the city, were very slight, considering the great number attending. The total cost during the fiscal year 1910 was 1,089,910 marks ($261,578.40), of which 811,910 marks ($194,858.40) was for salaries.[2] These figures do not include cost of buildings, but only their maintenance. Thus, the annual cost, aside from first cost of buildings, was in 1909–10 $8.09 per pupil. No tuition fees are charged in these compulsory schools. It must be remembered in considering this cost that assistant teachers are paid but 3 marks (72 cents) an hour, and other costs are low more or less in proportion.

More closely adapted to specific industrial needs in different trades is a large group of trade schools for apprentices. These schools are quite various in their nature and the sources from which they are supported. Eight of those existing in 1909–10 were supported by the city, the State, and by guilds, associations, and others interested.

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[1] *Verwaltungsbericht des Magistrats zu Berlin*, 1910. No. 9. *Bericht über das städtische Fach- und Fortbildungsschulwesen*, p. 2.

[2] *Stadtshaushaltsetat: 1910. Kap IV. abteil, 10, Pflichtfortbildungsschulen.*

Seven were supported as above, except that the State furnished no aid, while six were supported and controlled by corporations and guilds, receiving merely financial aid and cooperation from the city. Of these last, four were recognized as substitutes for the compulsory improvement school. Attendance on none of the others freed from the obligation to attend this school. Most of these schools have Sunday or evening classes, or both, while very few have day classes.

The largest of these apprentice trade schools is the Trade School for Book Printers (Die Fachschule für Buchdrucker), founded in 1875, which I visited. It is housed in a common-school building, where its classes meet two evenings a week, from 6 to 8. Its courses are of three years duration. Carefully planned by its directors to meet the special needs of their trade, and one of the few schools recognized by the city as a substitute for the compulsory improvement school, it is a type of the sort of school which many employers most prefer and a source of great pride and satisfaction to the association which founded and maintains it. This organization is the association of Berlin owners of book-printing establishments (Verein Berliner Buchdruckereibesitzer). It chooses the directors and supports the school, except for the rooms provided by the city. This association was once a guild, but owing to the objection of some of its members changed to the looser organization of an association (Verein).

The pupils are divided into two groups, the printers and the typesetters, who have separate classes. In the winter term of 1909–10 there were 1,456 pupils in the two departments. The instruction is practically all technical, there being no workshops except one printing shop. The classes for printers include German, arithmetic, physics, mechanics, drawing, and trade theory. The classes for typesetters are in German, Latin, French, English, Greek, arithmetic, trade theory, drawing, setting of Greek and mathematical sentences.[1] All of these courses are closely adapted to trade needs, the languages and mathematics, for example, being studied only in so far as will enable the apprentices to set type in these subjects. The masters are well satisfied with the results of the school, in improved work done by the apprentices.

Another group of trade schools are the higher trade schools with classes for both journeymen and apprentices. These include: the Hall of Industries (Der Gewerbesaal) and the Second Handworkers' School (Die Zweite Handwerkerschule), supported wholly by the the city; the First Handworkers' School (Die Erste Handwerkerschule), and the Building Trades School (Die Baugewerkschule), supported by the city and State jointly; the City Higher Textile School (Die Städtische Höhere Webeschule), supported by city, State, guilds, associations, and interested individuals; and the Berlin Cabi-

[1] *Übersicht*, pp. 284, 285.

netmakers' School (Die Berliner Tischlerschule), supported by the city and by two guilds. Of these schools, two, the Hall of Industries and the Berlin Cabinetmakers' School, have, besides day classes for journeymen, seven branch Sunday and evening schools each throughout the city.

The Berlin Cabinetmakers' School, which I visited, is designed primarily for journeymen and masters, though it also accepts those apprentices who have worked two years at their trade. It offers day courses for 40 weeks a year and of two years' duration. The object is to correct specialized training and to fit its students to become technicians, designers, foremen, and superintendents. Its subjects are both theoretical and practical, as shown in the following standard course:[1]

Subjects in the Berlin Cabinetmakers' School.

Subjects.	Hours per week.	
	First year.	Second year.
Practice in artistic cabinetmaking	20	16
Practice in machinery	4	4
Study of materials	4	.....
Chemistry	.....	2
Bookkeeping	2	.....
Trade arithmetic	2	.....
Calculation (of costs, etc.)	.....	2
Drawing	16	24
Total hours per week	48	48

The school has very well-equipped shops and turns out work of a commercial character and very high grade. The design of furniture, of modest as well as of high cost, in Germany is on the whole of a high artistic grade. This result is largely due to the good work of such schools as this and the industrial art schools. The students make original designs, and execute many of them themselves. Others have been used in commercial work. The director is a master cabinetmaker and most of the teachers are experts in the trade. The school limits itself to furniture making, the First Handworkers' School specializing in interior architecture. The school also has departments for turning and sculpture.

In its Sunday and evening classes scattered throughout the city instruction is given evenings from 7 to 9, and on Sunday mornings. The instruction is almost all technical, drawing being easily first in importance, and there being only three subjects involving shop work, machine practice, turning, and modeling and sculpture in wood. The other subjects taught are ornament drawing, projective drawing, study of fastenings for and forms of wood, perspective and shadow

[1] *Übersicht*, pp. 227ff.

drawing, trade drawing, chemistry, trade arithmetic and calculation, and bookkeeping. The total number of students in day and evening departments in the winter, 1909–10, was 816. The cost for the year 1909 [1] was 101,986 marks ($24,476.64). The city bears almost all of this expense, the guilds contributing but little.

Another school visited, the City Higher Textile School, was established to meet the needs of the textile and clothing industries of Berlin. The instruction is technical and the school has many workshops, but it meets commercial needs as well as industrial. Many or most of its students, by making cloth at its looms and dyeing them in its dye shops, learn the technical aspects of fabrics that they may the better judge them and so handle them to better advantage in commercial dealings. There are both day and evening departments. The day department includes the following commercial courses to train in the handling of cloth: Design drawing, clothing manufacture, lace making, hand and machine embroidery, weaving and knitting, and dyeing.[2] Many of the students are in, or expect to enter, textile industries. The school meets the needs of those in, or looking forward to, the greatest variety of positions. The graduates of its courses secure better positions because of their study there.

These facts are shown especially in the evening dyeing classes, which draw apprentice dyers, technicians, university graduates in chemistry, and master dyers. The classes must naturally be divided into elementary and advanced. The results with all of these classes of students are seen in the attainment of special knowledge of the chemistry of dyeing and corresponding advancement. Practical master dyers, for example, who work ordinarily by rough rule-of-thumb methods, are enabled by this training to test their chemicals, and by this and other means to save materials.

There were, in the winter of 1909–10, 158 pupils in the day courses, 339 in those on evenings and Sundays. The total cost in 1909, exclusive of first cost of buildings, was 100,525 marks ($24,126), of which 12,290 marks ($2,949.60) was supplied by four interested guilds and associations, including the chamber of commerce.

The First Handworkers' School was also visited. This school is a day and evening school for apprentices and journeymen, whose classes are almost exclusively theoretical (technical). Its only workshop is a small one for book printers. The Second Handworkers' School is of similar type, but with more practical instruction in workshops. The Building Trades School has practically all theoretical instruction, while the Hall of Industries, a school especially for the machine trades, has much practical shopwork in addition to theoretic instruction. Most of the apprentice trade schools also have shops.

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[1] The latest year of which I have data on costs.

[2] *Programm der Städtischen Höheren Webeschule, Berlin*, 1911, pp. 5, 6.

In such higher or lower trade schools as have workshops the apprentices and journeymen, many of whom receive but a one-sided and specialized training in their employer's shops, can learn somewhat of the operations as well as of the theoretic basis of other branches of their trade. The improvement school can also correct one-sided shop training to a slight extent, but only by the spoken and written word (chiefly the former) and not by actual doing of the operations studied.

Many specialized journeymen who as apprentices learned but a small range of operations in their employer's shop are enabled to change their branch of work and if necessary learn the new branch more quickly because of their school training. In some cases processes learned in a trade school may enable the future journeyman or master to do work which would otherwise have had to be sent out to a special shop. Thus press gilding, a branch of bookbinding, is taught practically in Berlin trade schools, but is a class of work undertaken by few but special shops. The trade-school training is sufficient to enable one who has grasped it thoroughly to carry on press gilding commercially, as incidental to bookbinding.

The quality of the work done in the higher trade schools is very evidently superior to that done by improvement school pupils. This is to be accounted for by the greater age of the pupils, the larger proportion of practical men who teach, and, in the more advanced classes, by the weeding process which has taken place at the end of the period of apprenticeship, for after this goal is reached no compulsion can force the journeyman to attend school unless he so desires, and only those continue in the trade school who intend to do their best and desire to advance. Many apprentices attend classes voluntarily in the apprentice trade schools, or evening departments of higher trade schools, in addition to their required attendance on improvement school. Such boys are in many cases the pick of the apprentices in earnestness and diligence. Some of the trade schools have no definite length of course, each boy or man advancing as fast as his capacity, application, and time permit.

A number of guilds require all the apprentices of their members to attend a trade school. The compulsory guilds [1] especially in many cases make such requirement, as they are better fitted to execute it than are the free guilds. This greater power is due to their control in such matters over the whole local trade in question. Such guild compulsion usually applies only after the completion of the apprentice's first year, for the masters do not consider that the average boy will benefit much from trade school until he is at least 15 years old and has had some experience in his trade. The compulsion applies

[1] In 1910 there were 26,994 members of compulsory guilds, with 8,837 apprentices; 22,907 members of free guilds, with 14,867 apprentices. *Geschäftsbericht der Handwerkskammer zu Berlin, 1909–10*, pp. 43–67

usually to a specific school and lasts ordinarily till the close of the apprenticeship; that is, for two or three years. Almost invariably it requires attendance evenings (and Sunday mornings sometimes); that is, during the apprentice's own time. Attendance on very few schools is accepted by the city in lieu of attendance on the compulsory improvement schools.[1] The consequence of these facts is that over 5,000 [2] Berlin apprentices must attend two schools during the last two or three years of their apprenticeship.

The chamber of industry has established a number of both theoretical and practical master courses for its district of Berlin and environs. Twenty-four bookkeeping courses were held in 1909–10, of 30 hours total length each.[3] A course was opened whenever 20 participants offered themselves; masters and journeymen and also wives and daughters of masters were admitted. Reviewing and practice bookkeeping courses were also given. Two courses undertook a general study of business, including such items as the law of handwork associations, struggles between employers and employees, etc. Fifteen courses in calculation took up cost accounting and the like. Twenty-two courses of very thorough scope and duration of 48 to 60 hours prepared journeymen for the master's examination. The subjects were bookkeeping, calculation, study of notes, exchange, and checks, study of industry, industrial insurance laws, associations, and a study of special trade and business matters (special for each trade).[4] A course in the law of associations was also given under the chief union of German industrial associations. Seventeen practical master courses were also given, of from 12 to 96 hours duration each, and attended by 345 participants.[5] The Berlin practical master courses differ from those in Hamburg in that they are more concerned to lead the way along trodden paths than in Hamburg, where the emphasis is all on the latest methods.

The Victoria Improvement School (Die Viktoria Fortbildungsschule) for girls and women, which I visited, is a private philanthropic school[6] some 25 years old, rooms for which are furnished by the city. It includes industrial, commercial, pedagogical, and domestic science work. Some definite results of the school's industrial training have been noted. Domestic training enables the girls to start as servants with 25 instead of 12 marks ($6 instead of $2.88) a month and to obtain better future wage also. For dressmakers, milliners, and the like the school training enables the girls to secure pay, though small, from the start, instead of working for about two

[1] E. g., of those above mentioned, on none of the six higher schools, and only on the Trade School for Book Printers.

[2] 5,554 apprentices. Übersicht, Supplementary table.

[3] Total cost, 3,673 marks ($881.52); per participant, 5.43 marks ($1.30). Geschäftsbericht.

[4] 563 candidates passed the master's examination in 1909–10. Ibid., pp. 170, 171.

[5] Cost, 5,952 marks ($1,428.67), total, or 17.1 marks ($4.14) per capita.

[6] One of two such schools in Berlin.

years without wage, as do almost all girls not specially trained. The advance in wage is also more rapid than for girls not school trained.

Several large firms in Berlin have their own apprentice schools. I visited what is probably the largest, that of the monster works of Siemans & Halske, manufacturers of electrical goods and machinery. The company had 225 apprentices in 1911, who were trained in a special shop and school, established in 1908, and recognized by the city as a substitute for the compulsory improvement schools. The instruction includes the same subjects as in these city schools, more specialized, however, to meet the needs of these apprentices and with some additional subjects. The curriculum is as follows:[1]

Curriculum of apprentice school of the Siemens and Halske factory.

Subjects.	Hours per week.				
	First year.	Second year.	Third year.	Fourth year.	Total.
German	2	1	.....	.....	3
Arithmetic	1	1	.....	.....	2
Civics	.....	1	1	.....	2
Mathematics	1	1	1	.....	3
Calculation	.....	.....	1	.....	1
Bookkeeping	.....	.....	1	.....	1
Drawing	2	2	2	2	8
Technology	.....	1	1	2	4
Physics and chemistry	.....	.....	1	.....	1
Electricity	.....	.....	.....	2	2
Hours per week	6	7	8	6	27

After the usual trial period, the apprentices are regularly indentured to the firm for a period of four years. During their first year they work only in the apprentice shop, except when in the adjacent classrooms. Their tasks for the first year are in most cases merely exercises, through which they learn the skillful use of tools, principally hand tools. The amount of filing done is extraordinary, this type of work being regarded as an especially good training in steadiness and exactness and a suitable introduction to the trades prepared for. In a few cases, as with hammer heads, calipers, and the like, the products are used in the works. Throughout the first year the apprentices receive no pay.

At the close of the year each one is given a chance to see the different departments of the factory and to choose the one in which he wishes to work. Thereafter they work among the journeymen in that department of the factory at regular commercial work, still continuing their attendance on the school six or eight hours a week. During the last quarter year of their apprenticeship so many of them as desire return to the apprentice shop to draw and execute

[1] *Diplom Ingeneur R. von Voss: Zur Frage der Ausbildung von Lehrlingen für die Gross Industrie. "Werkstattstechnik". Heft 5, 1911. Verlag Julius Springer, Berlin.*

their journeyman's piece. The making of this piece is desired by the company, though not required. Most of the boys make it. The journeymen pieces on exhibition are a fine set, of which the firm is proud. In the journeyman's examination, the apprentices of Siemens Halske stand superior to all others in the same trades in Berlin.

The examination passed, or the apprenticeship merely ended, the journeyman or factory worker may go into any one of the four chief trades practiced in the factory—that of ironworker, turner, machinist, or electrician—and there specialize more narrowly than before.

The officials of the company with whom I talked expressed the greatest satisfaction with the apprentice school. Although yet so young, it has already shown fine results in raising the interest and skill of those it has trained. The company prefer their own to the city school, because their own instruction, given entirely by engineers and other industrial and commercial experts of the firm, is more practical and more closely adapted to the parallel-shop training, and to their industrial needs. A satisfactory proportion of the graduated apprentices, now journeymen, remain with the company. Further, the apprentices, considering their four-year term as a whole, and despite the cost of the apprentice school and shop and the unproductive first year of work, are found to be profitable to the company.

Looking over the Berlin industrial schools as a whole, we see that here, as elsewhere in Germany, industrial education does not shorten the period of apprenticeship, except in so far as (chiefly from the standpoint of the employer) the taking out of time for the school work may be said to do so. Generally speaking, the schools increase the interest of the pupils in their work, but this does not apply to all pupils, for in the compulsory-improvement schools many of the pupils are not there from choice and are lazy and indifferent. There is a special demand by employers for those who have studied in trade schools, wherever such study is optional, because of the greater skill and industrial intelligence thereby gained. This demand shows itself in the better positions and wages secured by those who continue in the trade schools more than the minimum period required.

Diligence in industrial school is practically necessary to pass the master's examination, which, as well as practical skill, requires theoretic knowledge which can be learned by most only in the schools.[1] This fact is a spur to some workers, but not to all, for the organization of modern industry, in Germany as well as in the United States, makes it hopeless for the majority of workmen to strive to become independent, or foremen, or technicians; and to be a master is only useful as a means by which to attain one of these stations. The

[1] Cf. curriculum of chamber of industry preparatory master's examination course, p. 104, above.

majority of German apprentices look forward to a lifetime as journeymen, or even as specialized factory workers who have not attained the legally defined journeyman's rank—i. e., passed the journeymen's examination.

The industrial schools have had a most salutary influence on the journeyman's examination in Berlin, which formerly was very poor.[1] The Germans set much store on these examinations, as furnishing definite tests of proficiency, theoretical and practical.

The school products are not sold, except in a few cases. Thus in the Berlin Cabinetmakers' School a student may sometimes sell his work, he in such case paying the school for the materials used. In most schools there are no considerable number of commercial products produced, and the schools usually prefer to keep the best work for exhibition. The view seems to be general that workshop instruction of a sort to be best given in schools and commercial production do not go easily hand in hand.

With minor exceptions, the Berlin industrial schools accept as students only those actually working as apprentices, journeymen, or otherwise, in the trade studied. There is thus no undue increase of the numbers entering single trades, for the number studying each trade is automatically adjusted to its needs. This is the case with practically all the schools I visited and studied in Germany. There is much unanimity on the question as to whether attendance on trade schools before the student has worked at the trade is desirable. Practical work in industry is always regarded as prerequisite to trade-school training received to good effect.

The expense of the industrial schools, though heavy, is regarded by the taxpayers as well worth while. The city provides the buildings in every case. The other expenses are shared as stated above. The expense per pupil is much greater in trade than in improvement schools, and, as is to be expected, higher in those trade schools having many shops and instructing advanced pupils than in others. The trade schools, higher and lower, enroll only about one-third the number of pupils that are in the compulsory improvement schools (11,754 to 31,466); while the proportion of apprentices in trade schools is also about one-third of those in the compulsory improvement schools (7,293 to 19,928).[2]

All classes of people are now well accustomed to the industrial schools and favor them. The masters formerly opposed them as a class, but now only a few individual masters do so. In no trade, as a whole, are the masters now opposed to the schools. As stated above, however, the masters prefer the trade to the improvement schools. They are not fully satisfied with the improvement schools, but

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[1] Vorschulrat, Dr. Carl Michaelis. [2] Übersicht, 1910, supplementary table.

not so dissatisfied as to be conducting a campaign for any change. The comparative attitudes toward the industrial schools of the industrial schoolmen and the employers indicates that these schools are the subject of chief interest to the schoolmen, but only one of a number of matters of importance to the masters.

Employers at first opposed compulsory attendance on improvement schools in the daytime. Now most of them have bowed to the inevitable and profess to like the new arrangement; but it is doubtful whether this professed satisfaction is always genuine. Employers are more or less favorable to the compulsory daytime attendance, according to the needs and exigencies of their trade, as has been described in the case of the Hamburg employers.[1]

Masters, most of them guild members, are on the directorates of practically all of these schools. The guilds do not in Berlin, as in some other cities, supply models or materials for school shops, except in case of guild schools and a few others, but they maintain advisory relations with them, especially close in case of the trade schools.

[1] Cf. p. 94, ch. 9.

CHAPTER XI.

THE INDUSTRIAL SCHOOLS OF MUNICH.

Munich, the capital of the State of Bavaria (Bayern), is one of the most generally attractive cities of Germany. In 1905 its population was about 583,000. Brewing is its greatest industry, but many artistic handicrafts find here a home. Its chief industries include the manufacture of machinery, bronze, silver, and other metal ware, furniture, leather products and gloves, artificial flowers, printing and lithography, and glass staining. In Munich, as in south Germany generally, factories are less and handwork more prominent than in north Germany.

There were formerly guild schools in the city, but there now (1911) exists but one, that for painters. The former guild schools have been absorbed into the city school system with the approval of the guilds. The masters prefer the city schools, since they save them all expense except the slight aid which they give the city schools.

The Bavarian school law, under which the local ordinances of Munich have force, requires three years of attendance at Sunday school, immediately following the compulsory common school attendance, of all boys and girls not excused for adequate reason. The Sunday school provides a minimum of but two hours of instruction other than religious, and may be on Sunday or on week day. But the obligation to attend Sunday school may be fulfilled by attending an improvement school recognized by the district government as an adequate substitute, because it has not only special (trade) subjects, but enough of the general subjects characteristic of the Sunday school. The provisions of the National Industrial Law pertaining to compulsory improvement schools [1] are explicitly accepted and the compulsion of employers of boys and girls to allow them to attend such schools where local ordinance requires is reiterated.[2]

Munich has had an industrial continuation school for apprentices and an industrial improvement school for journeymen since 1875. These schools were for years but little specialized, while the apprentice school gave no trade instruction at the start. The present organization of the schools has taken its stamp from the original and resourceful personality of Dr. Georg Kerschensteiner, since 1895

[1] R. G. O., secs. 120, 139, 142. Cf. ch. 8, p. 81.

[2] Royal supreme law concerning school obligations, June 4, 1903; amended March 7, 1906. Text in Baar, pp. 19, 20.

superintendent of Munich schools. In 1900 Dr. Kerschensteiner won the prize of the Royal Academy of Sciences of Erfurt for the best essay on the subject of the most desirable education for boys between the common-school and the military-service ages (from the fourteenth to the twentieth year). This essay, *Staatsbürgerliche Erziehung der deutschen Jugend,* has been widely read, and in 1910 was translated into English under the title "Education for Citizenship."[1]

In this book Dr. Kerschensteiner asks: "How must the modern constitutional State fulfill its functions?" The answer given is this: "By giving to everyone the most extensive education, one that insures (*a*) a knowledge of the functions of the State and (*b*) personal efficiency of the highest degree attainable."[2] His educational groundwork is stated elsewhere as follows:

> The final goal of all public schools which are supported by public funds is the training of the pupils to be useful citizens. A useful citizen is one who contributes by his work, directly or indirectly, to the attainment by the State of its goal as a legal and cultural community. The first task of the school is the promotion, so far as may be, of the skill as well as joy in work of the pupil. The second task is the early accustoming of the pupil to placing his joy and skill in work in the service of his companions and fellow men as well as of his own. The third task is the connecting of the so-built-up readiness for service, consideration, and ethical devotion, with an insight into the purpose of the State, so far as such an insight can be developed in the pupils, considering their position and degree of maturity.[3]

The relation of means to end in Dr. Kerschensteiner's mind is shown best by an extract from an interview when he was lecturing in this country. He says:

> The idea of industrial education is not the foundation of my work. The object of these schools is to train citizens. To train citizens it is necessary to enter into what is the daily life of 90 per cent of our people. Thus it becomes necessary to make the workshop the center of the school.[4]

Again, in his prize essay, he writes:

> As a means of insuring personal efficiency, and so of enabling a pupil to take that part in society which his capacities warrant, the first place must be assigned to a training in trade efficiency. This is the condition sine qua non of all civic education.[5]

In this trade training, the foundation for the civic virtues is laid in "conscientiousness, diligence, perseverence, self-restraint, and devotion to a strenuous life."[5]

The year after coming into office as superintendent of schools, Dr. Kerschensteiner called together the presidents of guilds, representing the local industries, and proposed to them that the city found a system of trade schools. They voted against him, but he finally won

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[1] Pressland, A. J., translator for the Commercial Club of Chicago, 1910.

[2] Ibid., pp. 21, 23.

[3] Kerschensteiner, Dr. Georg. *Organization und Lehrpläne der obligatorischen Fach- und fortbildungsschulen für Knaben in München, 1910.* Einleitung, pp. 8, 9.

[4] N. Y. Times, Dec. 4, 1910.

[5] Education for citizenship, p. 24.

them over. In 1900 he persuaded the city to reorganize its school system by the introduction of an extensive system of trade schools. There were factory schools in existence at the time, but as Dr. Kerschensteiner says, they were inadequate, for they shaped the boy "for the factory, not for the boy."[1] In this connection it may be well to quote Dr. Kerschensteiner's statement that "nowhere outside of Russia have I found such neglect of childhood as in England and America." To prevent such neglect in Munich, the industrial schools were established. Since the beginning of the school year 1906–7 they have been fully organized and in full operation.

There were in 1910–11 in Munich 55 trade improvement schools, including 2 commercial schools, whose attendance is compulsory for apprentices.[2] Ten compulsory district continuation schools meet the needs of the unskilled boy workers and of those in trades having too few apprentices to allow a separate school. One compulsory "help-school" aids weak-minded pupils. Twenty-three of the apprentice trade improvement schools have voluntary courses for masters and journeymen in connection with them, and there are other independent courses and schools for the same class of workers. Compulsory improvement schools are also provided for girls.

The boys' improvement schools and the journeyman and master courses are housed in seven large buildings erected for the purpose in different parts of the city.[3] Some of the improvement school classes overflow into the common school buildings. The trade improvement schools are grouped in buildings according to related trades, though some trades are represented by several schools in different buildings. The school authorities profess themselves willing to organize a trade school for each trade having 25 or more apprentices. The most important trades have four schools, most have only one, while a few petty trades have no separate school, and their apprentices attend a school in common. The trade schools, with their groupings in the several buildings, are as follows:[4] I. Liebherrstrasse Industrial School:[5] (1) Turners, brush makers, and related industries; (2) druggists, and dealers in dye and other materials; (3) leather dressers and hand shoemakers; (4) wood and ivory carvers; (5) chimney sweeps; (6) coachmen; (7) saddlers and trunk makers; (8) coopers; (9) iron-workers (building and fine work); (10) smiths; (11) joiners and cabinetmakers; (12) shoemakers; (13) tapestrers, decorators, lace makers; (14) oven makers and setters; (15) watchmakers; (16) wagon builders. II. Pranckhstrasse School: (17) Fine machinists, opticians, and instrument makers; (18) machine builders; (19) mechan-

[1] N. Y. Tribune, Dec. 4, 1910.

[2] *Fünfter Yahresbericht der männlichen Fortbildungs- und Gewerbeschulen Münchens.* 1910–11.

[3] Value of land, buildings, and equipment, 1910: 4,824,099.85 marks ($1,157,783.96). Yahresbericht, 1910-11, p. 19.

[4] Yahresbericht, 1910–11, pp. 5–8.

[5] The school that I visited.

ics, electricians, and gunmakers; (20) ironworkers (second department); (21) joiners (second department); (22) tinners, installers, fitters' helpers, and metal stampers; (23) bookbinders; (24) book printers; (25) lithographers and stone printers; (26) photographers and chemists; (27) metal casters, brass founders, and chasers; (28) tin casters. III. Elisabethplatz School: (29) Coppersmiths; (30) machine builders (second department); (31) mechanics, etc. (same as 19, second department); (32) ironworkers (third department); (33) tailors; (34) joiners (third department). IV. Gotzingerplatz School: (35) Machine builders (third department); (36) mechanics, etc. (third department); (37) ironworkers (fourth department); (38) joiners (fourth department). V. Single scattered schools: (39) Bath assistants, hairdressers, and wigmakers; (40 and 41) hotel keepers (2 departments); (42) gardeners; (45) confectioners and pastry cooks; (46) butchers (at the city slaughterhouse); (47) musicians and music pupils. VI. Louisenstrasse School: Journeymen's and master's courses chiefly; also (48) masons, stone masons, and plasterers; (49) dentists; (50) jewelers, gold and silver workers; (51) stuccoworkers and sculptors. VII. Westenriederstrasse School: Journeymen's and masters' courses chiefly; also (52) decorative painters, lacquerers, gilders, and cask painters; (53) glaziers, glass, enamel, and porcelain painters. VIII. The Commercial Improvement School, embracing schools for (54) those in commerce; (55) clerks and Government officials.

All boys in Bavaria may leave the common school when they are 14 years old and girls when 13, unless they have completed it before. About three-fifths in Munich complete the course without repeating a year. They are then usually 14 or 15 years old. Of those who do not go to a higher education, about four-fifths enter industry or commerce as apprentices or clerks, and one-fifth become unskilled or juvenile workers. Every boy in Munich who need no longer attend the common school must attend a trade improvement (or continuation) school for at least three years immediately following the common school attendance, and generally, if an apprentice, throughout his apprenticeship. Under the National Industrial Law this obligation can not last beyond the eighteenth year.[1] Girls must attend improvement school for three years or at least until they are 16 years old.[2] Compulsory attendance for girls has been found as necessary as for boys, to prevent employers wishing cheap labor from employing girls to the displacement of boys.[3] Boys unusually well prepared may, on evidence of their proficiency, be advanced on entering a trade school a term, a year, or even two years. Those who have

[1] R. G. O., sec. 120.

[2] Kerschensteiner: *Fach u. Fortbildungsschulen Münchens*, pp. 5, 11; also: *Satzungen für die Fortbildungsschulen der K. Haupt- und Residenzstadt München, 1905*, sec. 20–21, p. 8.

[3] Satzungen, secs. 20. 2, 3. p. 8.

satisfied the nominal obligation to attendance, but who have not reached the proper proficiency, may be required to attend longer, but not longer than the completion of their eighteenth year.[1]

The hours of instruction in the trade (including the commercial) improvement schools range from 7 to 11 per week, in most cases 8 to 10 hours, varying between the different schools. By municipal ordinance, none of the compulsory instruction is given after 7 p. m., though some voluntary classes even for apprentices are held later. There are almost no classes on Sunday. Most of the schools have classes from 4 to 6 hours consecutively, usually in the afternoon and early evening, though sometimes in the morning. The apprentices thus attend either about 2 half days or about 1 full day. The abolition from among the compulsory classes of late evening instruction improves the quality of the work done by the pupils. The school year is about 10 months.

The curriculum and general plan of the trade (improvement) school for fine mechanics is typical of these schools.[2] In this school opticians' and instrument makers' apprentices study 9 to 9½ hours 1 day of each week, closing at 7, for 4 years (in most of the schools for but 3 years). The subjects taught are as follows:[3]

Curriculum of the trade improvement school for fine mechanics.

Subjects.	Hours of instruction.			
	First year.	Second year.	Third year.	Fourth year.
Religion	1	1	.....	.....
Business composition and reading	1	1	1	.....
Industrial arithmetic and bookkeeping	1	1	1	1
Ethics and civics	1	1	1	.....
Physics	1½	1½	2	2
Trade drawing	2	2	2	2
Practical instruction with study of materials and processes	2	2	2	4
Hours per week	9½	9½	9	9

Religious instruction imparted by a priest or teacher, Roman Catholic or Protestant, appointed by the religious authorities, is given in all the trade improvement schools. The business composition aims to give familiarity with business forms and practice in writing business letters. The reading is so selected as to have an ethical value and tempt the pupils to acquire the taste for good reading. The industrial arithmetic and bookkeeping is concerned with practical problems of computation of solids, keeping personal and business accounts, making business estimates and the like. The

[1] Satzungen, secs. 20, 2, 3. p. 8.

[2] A complete account of the curricula of several other of the Munich trade improvement schools can be found in Bulletin No. 14 Nat. Soc. Promot. Indus. Educ.: "The trade continuation schools of Munich."

[3] Yahresbericht, 1910-11, pp. 120, 121.

ethics and civics (Lebens-und bürgerkunde) are designed to help the student to adjust himself to his environment, and include studies of hygiene, ethics, apprenticeship and industrial relations, history and present conditions of industry, the rise of mechanics, the town, district, State, and nation, and the rights and duties of the citizen relative to each. The physics is elementary and practical. The trade drawing is practical and receives much attention. Dr. Kerschensteiner says of this trade school as of the others: "Nothing is drawn that is not made in the workshop, and nothing made there that is not drawn." [1]

The practical instruction aims to make the pupils acquainted by observation and practice with the chief materials, tools, processes, and products of his trade. According to Dr. Kerschensteiner: "We intend that the boy shall understand, at least once, every important process or method in his trade, and shall perform it himself, either in miniature, or, whenever possible, in real materials." [2] In the Fine Mechanics' Trade School the different kinds of iron and steel, tempering, defects, measurements, geometrical forms and their production, hand and machine tools, other metals, filing, turning, and other growingly complex measurements and processes are studied and practiced.

Other German industrial schools than those in Munich have workshops, and the presence of these is practically universal in higher trade schools, as those for journeymen or masters. Many other improvement schools also have workshops. But nowhere, as in Munich, do workshops in the improvement schools play so large a part throughout a comprehensive system as in the work of those schools. In most other German improvement school systems workshops are incidental. Here they are, as they are intended to be, the center and focusing point of the whole instruction.[3] In number of workshops, in their general application to all the industrial trade schools, and in the time given to instruction in them also, the Munich industrial schools are regarded universally as the leading example of workshops in the improvement schools. Wherever in conversation the question as to the expediency of such shops was raised, the names of Kerschensteiner and Munich were quick to appear as the leading theoretical exponent and the practical example, respectively, of the system. I shall return later to the discussion of these workshops, the crux of the Munich industrial school system.

The practical classes average 12 to 15 pupils per teacher;[4] the theoretical classes, 30 to 40. The trade classes were formerly larger,

[1] Kerschensteiner: *Fach- und Fortbildungsschulen*, p. 13. Teachers in the trade schools say this maxim is not carried out literally.

[2] New York Tribune, Dec. 4, 1910.

[3] Kerschensteiner, G. "The organization of the continuation school in Munich," p. 19. In three lectures, etc.

[4] With extremes of perhaps 10 and 24.

but were found to be unsuccessful. Where a school has more than one class of each grade, the better and the poorer pupils are placed in separate classes. Examinations, practical and theoretical, are held at the close of the courses, and certificates given to those who pass them.

The teachers of the theoretical subjects are almost all common school teachers; those of the practical (workshop) subjects are chiefly masters and journeymen of the respective trades. The teachers in the trade improvement schools (excluding the commercial schools) are classed as follows (June, 1911): Head teachers, 106; chief industrial teachers, 40; common school teachers, 103; teachers from industrial positions, 88; those from other positions, 29. Thus 88 out of 366 teachers in these schools are practical industrial workers (masters and journeymen).[1] The practical men—masters and journeymen—who teach trades are required to attend for two years a class in teaching principles and methods, taught by a city school inspector. Some [2] teachers of trade subjects (such as trade drawing, study of materials, and industry and workshop instruction) are common school teachers who have learned somewhat of the technic of the trades in commercial shops. The masters are satisfied with all but these teachers but do not believe that they can give first-rate practical workshop and other trade instruction. The trade teachers are paid 96 marks ($23.04) for each hour a week taught through the year. The other teachers receive specified amounts, from $720 to $1,300, with retiring pensions for long service.[3]

The relation of the Munich trade schools to the employers and guilds is peculiarly close. The chambers of commerce and industry nominate such guild members as are eligible to the school directorates, and each directorate must include at least one member (and may have as many as three) of the group of trades served by the school. The nominated body of eligibles, which includes most of the trade leaders in the city, may inspect the schools, advise as to instruction, propose trade teachers, take part in the oral and inspect the written examinations. The employers in each trade are also consulted as to the hours for the compulsory and other instruction most satisfactory to them. In return the employers are expected to and do aid the schools by advice, gift, or loan of materials, models, and tools, and by watching over the regular attendance of their apprentices or other boys and girls employed.[4] At first the guilds and individual masters aided the schools by supplying tools, materials, and models, and they still do so somewhat, but in the main they now find it more convenient to contribute instead small sums

[1] Compiled from figures in Yahresbericht, 1910–11, pp. 408–419.

[2] "A few only," said a teacher; "A growing number," said the chamber of industry.

[3] Sadler, ch. 19.

[4] Satzungen, Dec. 17, p. 7.

through their guilds. Masters who belong to no guild must contribute a like amount directly.

The 10 district continuation schools are primarily for unskilled workers, though a few apprentices of scattering small trades attend also. They require attendance for eight hours a week for two years. Their several curricula differ but slightly, and are represented by that of the Plinganstrasse school:[1]

Curriculum of the Plinganstrasse district school.

Subjects.	Hours of instruction.	
	First year.	Second year.
Religion	1	1
Composition and reading[1]	1½	1½
Arithmetic[1]	1½	1½
Ethics and civics	1	1
Gymnastics	1	1
Manual training and drawing	2	2
Hours per week	8	8

[1] Alternately 1 and 2 hours.

The arithmetic is designed to aid the pupil to keep his accounts and to understand simple dealings with banks, with the national insurance funds, and the like. The ethics and civics is much the same as for apprentices, but with no special application to any trade. The manual training and drawing aim to arouse the interest of the boys in things mechanical, that some may seek to enter the trades, and to prepare them the better for entrance into the trades and trade schools.[2]

The higher trade schools include day trade schools, and courses for journeymen and masters. Some of these occupy buildings devoted almost exclusively to them, while 23 are connected with improvement schools of the same trade. Attendance on all of these schools is purely voluntary. There is a day trade school for woodworking and interior furnishing, with 55 students, and a day trade school for artistic bookbinding with 25 students (1910–11). In each of the two large buildings given over chiefly to higher trade courses, there are both Sunday and evening schools for journeymen and masters engaged in industry, and day courses of 36 to 42 hours total duration for the same classes of workers when out of work. Two public halls give opportunity for drawing practice and for instruction for those in the building trades, one in free-hand and the other in trade drawing. All of these courses are arranged to suit the convenience

[1] Jahresbericht, 1910–11, p. 391.

[2] Kerschensteiner: *Fach- und Fortbildungsschulen München*, pp. 329–331.

of those to be benefited and thus are adapted to special trade exigencies. Short courses are quickly arranged, if need be, when any considerable unemployment causes temporary demand for them. Apprentices, when their period of compulsory attendance is over, liking the new freedom, usually do not attend any school for two or three years. Many move to other States. But a considerable proportion of journeymen, when they reach the age of 20 to 22, return to the public trade schools for further and voluntary work. Journeymen and masters up to 50 years of age are found in these schools.

Education for girls has not received much attention as yet in Munich. Improvement schools for girls require but three hours a week attendance, which period will be doubled from 1912 on. There is not large need as yet for industrial schools for women in Munich. They go into but few industries—the women's industries, as housekeeping and domestic service, dress and hat making, photography, etc., besides commercial work. Girls are free to attend the boys' trade schools, if they wish. Domestic science is the chief study in the compulsory improvement schools. A voluntary improvement school with general, commercial, and household subjects; a voluntary eighth class of the common school; and two private schools subsidized by the city—the Riemerschmid Commercial School and the Woman's Work School—also minister to the wants of girls and women.

There were in June, 1910–11,[1] in the 55 trade improvement schools, 9,330 pupils; in the 127 journeymen's classes, 2,733, of whom 450 were in day trade schools and courses; in the 10 district continuation schools, 1,018; in the compulsory improvement schools for girls, about 7,500. The total cost of all these schools, except those for girls, was in 1910–11 1,169,781.47 marks ($280,746.55). This included 120,000 marks ($28,800) for new buildings, repairs, and rent, but takes no account of the original cost, interest, or sinking fund, on a property in land, buildings, and furnishings valued at 4,824,099.85 marks ($1,157,783.96). The cost in 1910–11, exclusive of existing permanent plant, for all pupils, except girls, was 98.42 marks ($21.46) per pupil.[2] The pupils in the improvement schools pay no regular tuition fees, and but trifling fees for the use of materials, etc. Those in the higher trade schools pay small fees, as 50 cents to $1 a month. The city common schools cost 93 marks ($22.32) per pupil,[3] which shows the improvement schools to be not very expensive in comparison. The taxpayers, however, sometimes grumble at these heavy expenses, but the city administration is liberal with the schools notwithstanding.

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[1] Yahresbericht, 1910–11.

[2] Computed from figures in Yahresbericht, 1910–11; especially pp. 17–19.

[3] Kerschensteiner: The Continuation School in Munich, in Three Lectures, p. 24.

The results of the trade improvement schools are evident in better work done by the apprentices, especially shown by better journeymen's examinations.[1] In 1907, the guilds or associations of master printers, tailors, shoemakers, and tapestrers declared that the journeymen's examinations were better on account of the improvement schools.[2] The results on specialization are favorable, enabling a specialized apprentice as a journeyman to learn another branch of his trade more quickly than he could do without the school training.[3]

The school attendance has been bettered by the change in the type of improvement schools, as has also the attention and zeal of the pupils in the schools. The employers differ as to whether this improvement extends also to the shops where the pupils work. The pupils quite generally like the schools, often better than the shops. The technical and especially the practical training (workshop) attracts them most. A number of masters or guilds claim to see an improvement in the conduct of the boys attributable to the schools.[4]

The masters regard these schools as equally efficient as the former guild schools.[3] In general, with qualifications to be noted later, the masters are satisfied with the new industrial schools. One patent and avowed reason for the approval of the masters is that the public schools save them money formerly spent on guild schools. Most individual masters and the majority in most trades are fairly well satisfied with or at least tolerate the compulsory day instruction. Some trades as a whole, as the smiths and the wrought-iron workers,[5] are actively opposed to this system because it disturbs their work greatly, the journeymen in these trades working always with the immediate aid of apprentices. The bakers, on the other hand, are actively for the day attendance, since their work is at night.[3] More and more, as also in other cities in Germany, employers are coming not only to tolerate but to actively call for the use of working hours for compulsory instruction. Thus, for example, the guilds of coppersmiths, joiners, and typesetters declare the day attendance to be superior to the evening, and state or imply that it is worth whatever extra cost it involves to the employer.[6] The employers in some cases pay the same wages to their apprentices or unskilled workers as if part of their working day were not given to school work. In most cases, however, the boy must accept a lower wage on this account.

Of the school workshops, the approval of the masters is much less unanimous and is generally more qualified when given. Of the opinions of guilds and other employers' associations, published by

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[1] Handwerkskammer, Munich.

[2] *Bericht über die Bewährung der Neugestaltung der gewerblichen Fortbildungsschulen Münchens, 1907, pp. 1–8.*

[3] *Handwerkskammer, München.*

[4] *Bericht über Bewährung.*

[5] Schlossers.

[6] *Bericht über Bewährung*, pp. 2, 3.

the school board in 1907, a majority expressed approval of the technical training, but few specifically of the practical (workshop) training. Those guilds specifically approving the workshop instruction were those of the lithographers and stone printers, tin casters, druggists (of all Bavaria), wrought-iron workers, and butchers. Those specifically opposed to the workshop instruction were the guilds of fine mechanics and opticians, joiners, sculptors, and stucco workers,[1] and potters.[2] The most pronounced opposition came from the association of fine mechanical and optical businesses in Munich. This association declared that the apprentice thinks the school instruction only is of much value; that the practical instruction is not comprehensive enough to be of much value; that the drawing is the only technical training given of much value; that the school has not the equipment to teach specialized machine work, as gear cutting; that first-rate practical teachers can not be secured by the schools at the low salaries they pay; and that, finally, the practical work of the school can never be equivalent to that of a commercial shop.[3]

The eyes of all Germany have been on the Munich schools and their workshops, and many men in industrial schools and in industry in other parts of Germany have well-developed opinions on the Munich schools and have watched the results of their shops. The impression that has gone out does not seem, on the whole, to be favorable to the school shops. In the next chapter I shall discuss the general question of shops in the improvement schools; suffice it here to note some typical opinions on the Munich experiment.[4] The Munich improvement schools are claimed to work in opposition, in many cases, to the training given by the masters, and to be regarded by the masters as not practical. The teachers are often primarily theoretical, and do not know thoroughly what they try to teach; and even when practical men, the school comes so to mold them that their teaching develops a theoretical tinge. The most extreme statement met was "the Munich experiment has failed, though some Munich masters approve of it." [5]

On the whole, the masters in Munich now approve of workshops in the schools, but only as aids to the theoretical instruction. As such aids they regard the school workshops as of proved value when in the hands of masters of their crafts.[6] They do not regard these shops as practicable substitutes for training in commercial shops, and do not desire them to become such. Thus the positive declara-

[1] The representativeness of this view questioned by the school authorities.
[2] *Bericht über Bewährung.*
[3] Ibid., pp. 8, 9.
[4] Also without discussing here any bias which the makers of these criticisms may have.
[5] All of the views expressed in this paragraph are from chambers of industry or masters and guild members.
[6] Handwerkskammer, München.

tion of the bookbinders' guild: "The school can never serve as a substitute for the workshop training." [1] They are opposed to the introduction of the so-called teaching workshops (Lehrwerkstätten), where a boy just out of common school is to learn his trade entirely, with no apprenticeship whatever.[2]

The school authorities, and especially Dr. Kerschensteiner, take these school workshops much more seriously. They may have no idea of altogether displacing apprenticeship, but they certainly aim not only to aid the theoretical instruction but to impart positive practical instruction also. The fact that in some of the schools they go systematically over those elementary operations of the trade which would be taught and practiced in all shops [3] indicates a more or less conscious endeavor to do what would probably be disclaimed were it put boldly: To teach the whole trade, and thus relieve the master of all burden of teaching his apprentice. This aim has certainly taken possession of one school official whom I questioned and represents his view of the aim and function of the schools. One of the greatest difficulties to be faced, were such a tendency to continue, and the school shops to be efficient enough, would be the acceptance of this condition by the masters, and the gradual shifting to public shoulders of the teaching burden formerly borne by the employer. To reshift this burden back again, were that desired later, might prove much more difficult than its assumption.

To the school authorities—which means primarily to Dr. Kerschensteiner—the practical or workshop instruction is the base of the whole superstructure.[4] In it the interest of the pupils is to center (as it has largely done), and from it the theoretical instruction is to take meaning and shape. It is to be chief, though the masters would have it subordinate. And why this great emphasis on the school workshops? The best reply is in Dr. Kerschensteiner's words:

> The essential reason why the continuation school should not become a purely theoretical school is that its limitation to theoretical instruction would form an almost insuperable barrier to transforming our schools into educational institutions for community life.[5]

Here we see again Dr. Kerschensteiner's philosophy of education. His basic purpose is not industrial, but ethical and civic. It is no part of my present purpose to evaluate these schools from the ethical and civic standpoint, supremely important though that be. The theory looks sound, and the prospects of its successful working out seem good. But in the process is there not great danger that, as in our

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[1] Bericht über Bewährung, p. 1.

[2] Handwerkskammer, München.

[3] Thus in the school described above, for fine mechanics.

[4] Bericht über Bewährung, p. 7. Kerschensteiner: The Continuation School in Munich. In Three Lectures, p. 19.

[5] Kerschensteiner: Continuation School, p. 28.

manual-training movement, the industrial results may become but slight and the whole movement be or become dominantly cultural?

Of the journeymen and master courses and schools I need only say that they are quite satisfactory. Workshops in such schools are not subject to some of the difficulties that assail them in the improvement schools. Like more or less similar schools in the United States, these higher schools are generally recognized as efficient in their training of skilled journeymen, technicians, designers, foremen, and masters.

Finally, the trade-improvement schools of Munich must be looked upon as an experiment not long enough established to have final judgment passed upon them. Their future development and results on industry will be of the greatest interest to those desirous of promoting industrial education and efficiency the world over.

CHAPTER XII.

RESULTS OF THE INDUSTRIAL SCHOOLS.

Having shown the organization and the workings of the industrial-school systems in three important centers, I shall turn now to the wider field embraced by all the cities in which I studied the industrial-education situation, and present certain results which have come from the schools in these cities, the attitude of the industrial employers to them, and certain problems which have arisen as to their most efficient working. The data contained in this chapter are derived from my inquiries of chambers of industry, school directors and teachers, and others. The statements as to the attitudes of employing masters are almost always made on the authority of the local chamber of industry, the body of all others best fitted by intimate knowledge of and relations to the masters of the district to represent their views. What, then, have been the results, up to the present time, of this extensive plant and patient effort? Can we speak with assurance of these schools as institutions which have accomplished, in measure, that for which they were established?

In every city visited, and with regard to practically every school or set of schools of which the inquiry was made, the masters held that the industrial schools resulted in the training of better apprentices and more highly skilled workmen. These good results were not forthcoming in equal degree from all the schools. In general, the masters regard the results of the trade schools as superior to those of the improvement schools; and the results of the more specialized improvement schools, called sometimes trade-improvement schools, as superior to those more general in nature. The higher trade schools, again, are almost always spoken of with more enthusiasm and as showing more marked results in increased skill than the lower schools. This fact can be attributed to the greater age, maturity, and acquaintance with industry of their pupils, almost all of whom attend voluntarily, and thus only when they really desire to learn. The well-equipped shops in such schools may also explain their results in part.

In many of the improvement schools it was stated that the schools stimulate the interest of the pupils in their work, but in others the qualification was made that this was true not of all the pupils, but merely of the better sort. Some of the pupils attend merely because they must and take but little interest in the school work. So far as the results on the interest of the pupils is concerned school workshops seem to be of advantage, though the added interest engendered by

them in the school work may or may not in each case extend to the pupil's own shop. To the question if there was a special demand for pupils of the industrial schools the usual reply was: "Yes, where attendance is optional, but not where all the apprentices must attend." In a few cases it was stated that higher wages resulted from attendance on improvement schools; invariably this was the case with the higher trade schools. In Dresden an official of the Saxon ministry of the interior stated that the masters could turn out better work because of the training received in the schools by their workers.

The journeymen's and masters' examinations are looked to by the masters and schoolmen as concrete evidences of proficiency. They give definiteness to the results of the industrial schools. In almost all the cities visited it was stated that the industrial schools had improved the journeyman's examination, and in a few cities that they had also resulted in better master's examinations. In a number of cases the improvement in the journeyman's examination was said to be due directly to the improvement school. I was told in several cities that the examinations were better in the city than in the country. Part of this difference is due doubtless to the better industrial schools possessed by the cities.

The industrial schools, as a whole, have a salutary influence on specialization. The improvement schools, whose results in this respect do not compare with those of the trade schools, influence specialization chiefly by broadening the industrial outlook of the apprentices, giving them a more or less general understanding of the related branches of their trade. The trade schools, especially the higher ones, can and do as a rule teach enough of the practical as well as of the theoretical aspects of a whole trade or large branch to add greatly to the worker's industrial resource. As a result of the trade-school training, many workers are able, when necessity prompts, to learn more quickly than otherwise a related branch of their trade.

The general attitude of the masters toward the industrial schools is, in every case of which I learned, favorable. The employers usually prefer trade (improvement or other) schools to the more general types of improvement schools. In most cities the masters prefer the city industrial to the guild schools. Many of these now no longer exist, having been taken over by the city or died a natural death when the city schools became compulsory. The masters are saved money by the city schools, which they formerly spent on the guild schools, which pleases them. In most cases they regard the city schools as equally efficient to the guild schools or nearly so. In Coblenz the masters have no special preference for the guild schools, if only they have control enough to insure that the instruction be practical; that is, adapted to the needs of industry. In two Saxon cities, however, Dresden and Chemnitz, the masters prefer the guild

to the city schools. In Saxony the guild schools are numerous and important.

Attendance on compulsory improvement schools is being more and more shifted to the daylight hours. The superior advantage of the daytime to the evening for courses of this sort is intensified by the compulsory nature of the attendance. If all those between certain ages and engaged in industry and commerce are required to attend evening classes, as was the case throughout much of Germany till recently, certainly many will be present in the schools whose interest and endurance does not permit them to benefit from the extra tasks at the close of the day. Such has been German experience, and consequently we find compulsory improvement school classes shifted ever more and more into the circle of the hours of the working day, however closely guarded by employers. The reader who sees statements concerning some German schools, that they have no classes in the evening, should realize that by this the Germans understand not later than 8 p. m.

The attitude of the masters toward compulsory day attendance of apprentices and other youthful workers on improvement schools varies greatly between the cities visited, and somewhat between the several trades. In the earlier days of compulsion the initiative in securing legislation was usually taken by others than the masters, and the masters were in most cases opposed. In the last few years, since the experiment has proved useful to industry in many parts of Germany, the masters have in some cases even taken the initiative in seeking to establish compulsory attendance.[1] The attitudes vary from strong opposition, as in Dresden and Chemnitz, through the several stages of opposition, as in Barmen, Elberfeld, and Dortmund, to toleration, as in Berlin, Frankfort on Main, and Dusseldorf; to approval, as in Magdeburg, Leipzig, Munich, Coblenz, and Duisburg; to special desire for compulsory attendance, as in Plauen, Essen,[2] and Aachen (Aix la Chapelle). It must not be understood that all masters or even most masters in all trades agree in their attitude; the above statements indicate merely the general reaction to compulsory attendance. In Hamburg, Berlin, Munich, Barmen, and Dortmund it was specifically stated that the masters were not in entire agreement among themselves as to their attitude, and that in Elberfeld and Dusseldorf there was no unanimity at all on the matter. I need not here repeat what was stated in another chapter concerning the difference of attitude of masters in different trades in Hamburg,[3] which

[1] As in Plauen, in Saxony, and Essen. The handwork masters of Essen petitioned the mayor, July 18, 1910, asking that after Apr. 1, 1911, the city authorities extend the (improvement) school compulsion to all the apprentices of those trades whose guilds request such action for them. Denkschrift des Essener Handwerks, 1910, p. 13.

[2] The Essen masters oppose that provision of the local ordinance which requires the employers to pay their boys' tuition in the compulsory school. Ordinarily, though, they shift this to their apprentices.

[3] Cf. pp. 94–95, ch. 9.

applies in greater or less degree throughout Germany, except to say that trades which receive the greatest benefit from industrial schools are among those which are most favorable to compulsory attendance, except where the disturbance to the shop work is greatest. In such case, as in some highly skilled machine industries, the great disturbance to the work often outweighs, in the mind of the employer, the admittedly great benefit of the technical training. The disturbance of work is generally greatest in the small shops, and for them, as for the larger shops, is generally lessened by allowing them to send the apprentices at different times. In general the tendency is toward the change of opposition into toleration, and toleration into approval, as the masters observe the results of the school training on their apprentices.

In Duisburg, Crefeld, and Aachen the voluntary industrial improvement school, which had preceded the present compulsory school, resulted in better average work than the present school, because most of those who attended the voluntary school were serious and earnest. The masters in these cities prefer the present schools notwithstanding, for they benefit a larger number of boys.[1]

More and more also the masters are coming to prefer day to evening instruction. The tendency in this direction is not as yet marked, but it is undoubted. In Plauen, for example, the masters sought to have the improvement-school instruction given in the daytime, chiefly because they regarded such instruction as much more efficient than that given in the evening. The Leipzig masters prefer the morning to the afternoon hours, if there is to be day instruction at all, for in the morning the boys are fresher and learn better. In Munich and in Frankfort on the Main much of the instruction in the industrial improvement school is given in the morning, to the satisfaction of the masters. In the Frankfort Industrial School,[2] in the decade 1890–1900, before compulsory attendance was initiated, the director tried experiments in the hours of instruction. He offered courses first from 8 to 9 p. m., then alternative courses from 7 to 9, then from 5 to 7, then morning courses. Many of the employers, as these courses were successively offered, sent their apprentices to the earlier courses.[3]

In general, the attitude of employers to compulsory attendance of unskilled workers is much less favorable than in the case of apprentices, chiefly because what they learn is more general than industrial in nature, and their industries neither feel the need of nor can greatly benefit by this training. Nowhere did I find this spirit so marked

[1] Though the voluntary industrial improvement school in Aachen had at times an attendance of 4,000 to 7,000.

[2] A voluntary school for apprentices and journeymen, attendance on which, to those boys who meet special qualifications, frees them from the necessity of attending the industrial improvement school.

[3] Herr Direktor Back, of Frankfort Gewerbeschule.

as in the Ruhr Valley, tributary to the lower Rhine, and the seat of great coal mines, iron smelters, and steel mills. Here the proportion of workers classed as unskilled (ungelernte) is very high; in the Krupp works, for example, 75 per cent or higher.[1] In Essen compulsory attendance has only been initiated since 1910, and there the Krupp firm, though approving of the compulsion for their apprentices, is very doubtful whether it will be worth what it costs the firm for the unskilled workers. They are, it was declared, many of them dull, and not a picked lot like the apprentices. In Duisburg the factory owners are opposed to compulsory attendance of their unskilled workers, and the same attitude is characteristic of the coal, iron and steel, and similar industries throughout the region.

The problem of securing suitable teachers for the industrial schools is one of the most difficult with which the school authorities have to deal and is not fully solved as yet. This problem exists both in the improvement and in the higher trade schools, though the latter schools are nearer to its solution than the improvement schools. Theoretical subjects, such as arithmetic, bookkeeping, physics, and the general studies of industry have been taught almost universally by common-school teachers in the improvement schools. The masters are generally fairly well satisfied to have this class of teachers for the theoretical or book subjects. That they have in most cases no improvement to offer to the use of professional teachers for theoretical subjects is indicated by the fact that in guild schools in Dresden, where the masters have an entirely free hand to pick the teachers which suit them best, all the theoretical instruction is given by common-school teachers of the city. In Magdeburg and Chemnitz, however, the masters wish to have practical men, preferably masters working at their trades, impart the theoretical instruction.

Quite different is the problem for teachers for practical or definitely trade subjects, such as trade drawing, study of materials, and all workshop instruction. Skilled practical artisans, when otherwise qualified, have generally been sought to teach these subjects. Inability to secure enough such men has required the turning of common-school and other professional teachers to these branches also. To do this they prepare themselves in commercial workshops or in industrial schools (usually higher trade schools). Their teaching, however, of the distinctly trade subjects has been on the whole quite unsatisfactory to the masters. They stated that these teachers did not understand fully what they tried to teach, and that their teaching often ran in opposition to the teaching in the employers' shops. As a result of such criticism by the employers, the tendency is quite general to secure practical men for the practical subjects wherever possible. The present status may be realized by the statement that

[1] An engineer of the company.

of 14 of the cities visited, the teachers of trade or practical subjects were but few of them practical men in 3 cases, chiefly practical men in 6, and all of this class in 5 cases.[1] Of 13 cities where data on this point were secured, in 2 the masters (the opinion voiced generally by the chamber of industry) professed not to be satisfied, in 4 to be satisfied in part, and in 7 to be quite well satisfied [2] with the sort of teachers in the industrial schools. Most of the cases of satisfaction were in cities where all the trade instruction was given by practical men.

In some cases, as in Cologne, professional teachers with practical experience (as for a year) in handwork are satisfactory to the masters. Elsewhere the ideal is stricter. Thus the handworkers of Essen ask that the instruction in the improvement school in each trade be limited to study of the trade, trade drawing, arithmetic and principles of bookkeeping, civics, and business composition (not omission of workshop instruction), and that all of these subjects, except the civics and business composition, be taught by suitable teachers of the trade, trained in a (special) course.[3] In Magdeburg the head of the trade and industrial schools stated that not only are professional teachers not in close enough relations with industry to teach in a practical way, but that practical men who devote themselves solely to teaching get out of touch with industry, and their teaching becomes less practical. All, he said, should be working in commercial shops during the same period that they are teaching.[4]

It has proved very difficult to secure skilled practical men who are also well fitted to teach. In some few cases, as in Magdeburg, men have been secured with both qualifications; but in most cities it has been found necessary or desirable to require the practical men to study teaching principles and methods in a special class established for them, either before beginning teaching or during their term of service. In Frankfort the director of the industrial improvement school stated that the masters without special theoretical training are unable to give the proper trade instruction, and that they themselves recognize this inability.[5] Frankfort had in session while I was in the city a course of four weeks' length which was attended by industrial-school teachers from all over the Rhine Valley. Dortmund has a similar course for the populous district of the lower Rhine.

The difficulty of securing skilled artisans for trade teaching, on account of the low salary paid in the schools, is also a real one. Some

[1] Few in Berlin, Elberfeld, Duisburg; most in Hamburg, Munich, Manheim, Cologne, Dortmund, Aachen; all in Plauen, Frankfort on the Main, Coblenz, Barmen, and München-Gladbach.

[2] Quite well satisfied in Plauen, Frankfort on the Main, Cologne, Elberfeld, Barmen, Dortmund, and München-Gladbach.

[3] Denkschrift des Essener Handwerks, 1910, p. 11.

[4] Stadtschulrat Dr. Francke.

[5] Direktor Neuschäfer.

men in industry, as the guild of fine mechanics in Munich, claim that the low wage keeps out all thoroughly skilled men. Elsewhere it was learned that though the salary is not what a skilled master, engineer, or other skilled practical man can earn in his prime, yet the security of the school position (after a year of probation) and the retiring pension which is granted in most cities enables the schools to secure men who can earn for the time being sometimes far more outside. Much of the teaching is also supplementary work, carried on for a few hours daily, with but little disturbance to the teacher's outside occupation.

In the higher trade schools the quality of the teachers, as is to be expected, averages higher than in the improvement schools, and there is usually but little criticism of the class of teachers engaged. Skilled artisans or engineers almost always give the theoretical instruction, while the practical is imparted by artists, engineers, architects, and the best professional teachers.

The problem of workshops in the industrial schools is one of the most important, if not now the most important, of all the present problems of these schools. The greatest variety of practice and aim is found with regard to school shops. In the higher trade schools workshops are the rule. In the lower trade schools also they very frequently exist. Such schools are intermediate in this respect to the higher trade and the improvement schools. In the improvement schools we find no workshops in some cities, as Berlin and Coblenz, and, in general, throughout Prussia. In Dusseldorf there are shops in the improvement schools for most of the trades, and in Munich every industrial improvement school has a shop. In most of the cities where I inquired as to this point the improvement schools have a few, but only a few, shops.[1]

In practically all improvement schools, whether there were shops or not, there were more or less models and demonstrating apparatus. The trades for which these few shops were established were always from the same small group: Confectioners and pastry cooks (conditorei), barbers, tailors, bookbinders, and printers. These trades are those in which the maximum advantage is gained from school shops for the minimum cost, and are also some of those where the masters especially desire shops in the improvement schools.

Workshops are quite generally desired in the higher trade schools. The great point at issue is whether workshops are desirable in the improvement schools. Of the cities visited, the masters in Leipzig, Plauen, Munich, Cologne, and Dusseldorf wish plenty of workshops, or more than they now have. In practically all other cities visited the masters desire only a few workshops in the improvement schools,

[1] Chemnitz and Plauen in Saxony, Magdeburg, Cologne, Elberfeld, Barmen, and Dortmund in Prussia.

or none at all. In most cases a few are desired, as for the trades above mentioned. In a few cities, as Barmen and Elberfeld—strictly factory cities—the cost of school shops is a main objection. This high cost, which is generally admitted to be inseparable from most sorts of shops, constitutes an objection, even in places where more shops are desired, as in Plauen. In the main, however, cost of shops does not prevent their presence where they are greatly desired.

But they are not in most cases greatly desired. The attitude of the masters in Munich may be recalled. There is a party among educators who wish to have workshops in the improvement schools and train the pupils practically as well as theoretically. The extremists of this party wish ultimately to relieve the masters of most or all of the training of their apprentices, and to shift the burden to the school. The masters, almost to a man, are opposed to any such procedure. Thus the handworkers of Essen, in a memorial to the mayor, say: "The improvement school has the task of extending the workshop training and not of displacing it." And again: "The school instruction must follow the order of progress of the apprentice in his shop step for step." [1] The fear of some that more school workshops may lead to the teaching workshop (Lehrwerkstatt), which may become a substitute for apprenticeship, has led the masters in some cities to oppose the school shops more than they otherwise would.[2] And such attitudes are held, despite the realization of many masters that the school shops shift from their shoulders some of the teaching burden.

The reason for this opposition to school shops is in part that the teachers in these shops in some cases are men not practically trained. If all workshop teachers were practical men, there would be less objection by employers to school shops. In Barmen and Elberfeld one chief reason for opposition to school shops is the fear of conflict between teacher and master, such as is claimed by some observers to exist in Munich. But most of the shop teachers are now practical men, and their proportion is increasing. Neither large cost nor the kind of teachers accounts for most of the opposition to school shops, though each contributes its influence.

The main objection to shops in the improvement schools is that they are of little use during the first year or two of apprenticeship. The average boy of 14 and 15, not yet much versed in the ways of industry in general and of his own in particular, can not, it is claimed,

[1] "The first year it should help the apprentice to find himself in his new environment—the shop, to recognize the tools and materials by name, form, purpose, and differences, and to comprehend the single process according to their order and to grasp the necessity of this order. The second year the emphasis should be on individual and more difficult (as mechanical) tools, properties of the chief materials, and working experiences. In the third year the goal should be set of giving the pupils a survey of the different spheres of work of their trade."—Denkschrift des Essener Handwerks, 1910, pp. 10, 14.

[2] As in Duisburg and Magdeburg.

benefit to any considerable extent from workshop training. If their first approach to practical work be in the school shop, they may become trained in habits unsuited to practical work if not actually harmful. Thus few schools can, and still fewer do, pay such close attention to economy of materials as commercial shops do from force of necessity. A habit of prodigality with materials may become ingrained in an apprentice from his school experience and be very hard to uproot. Most boys of 14 and 15 are not yet serious and interested enough to secure the good from school shops which such shops should give. And, finally, if there be one maxim more than another on which practically the whole structure of German industrial education rests, it is that some practical training in actual commercial work shall precede industrial school training.

In the case of the theoretical training of the first year of the improvement schools, this maxim is modified by substituting "accompanying" for "preceding," and some exceptions are found elsewhere in the system, as in the higher technical training in the technical high schools. For almost all grades and kinds of industrial training, however, the maxim is followed. Adherence to this idea is one of the keystones of Germany's success in industrial education. Whatever reason there is for its modification with regard to the first theoretical training of the improvement schools, there is less reason in the case of the shop training. For this can be secured in the shop of the master; the theoretical training generally can not be. The masters, as a rule, feel perfectly well able to instruct their apprentices adequately in the practical work of their trades; not so with regard to the theory. The theoretical background, now so necessary for proficiency, few masters have the time and many have not the ability to impart adequately. The masters quite generally recognize this fact and call consequently for specialized theoretical trade training in the improvement schools.

In many cases the masters may not give adequate practical instruction to their apprentices, due to specialization; but such specialization does not exist to the extent that it does in the United States. Further, it is very doubtful how far shops in improvement schools can correct such specialization. Though the improvement schools tend toward this end even when lacking shops, and doubtless in greater degree when they have shops, yet the higher trade schools have most effect of this sort. Both for results on specialization and for general efficiency shops during the last year or two of improvement school courses are much more likely to be fruitful than those during the first year or two.

In the higher trades schools, workshops are desired chiefly not to furnish the basic training in the trade, but to give opportunity for

experimentation, working out new designs, learning of new or unusual machines, and the like. The school shop is in no danger in Germany of usurping the place of the commercial shop.

A director of the chamber of industry in Aachen made some significant criticisms of the industrial schools. He said that the school men try to include too much in the improvement school, especially too much theoretical instruction. Theory the masters must have, but they think that the period of apprenticeship is only the beginning of the worker's industrial education. The school men think of it largely as the conclusion, and therefore crowd exchange, study of industry, bookkeeping, etc., all into three years. With regard to school shops, he said that some trades or processes could be taught in them, others not. Wrought-iron working and saddlery could not well be taught in school shops. In some trades, as that of cabinet-making, some processes could be taught, others not. Thus, inlaying can best be taught in school, for the master has not the long time required; and also planing, sawing, and the like, but not the making of a chair or table.

A peculiar and significant method of practical training is followed in the industrial improvement school of Frankfort on the Main. The school has no workshops, and none are desired. The great cost of workshops is not the reason for their absence. Theoretical training is chiefly desired, but practical training is also obtained by a peculiar cooperation between masters and school. The pupils are assigned by their industrial teachers practical tasks—for example, in the first year of woodworking, joints in wood. These they must make in their master's workshops and bring to school. The school will supply materials, or pay the master their cost if he so requires, but ordinarily he does not do so. The pupils usually do these tasks during working hours, but the longer ones are sometimes done after working hours.

In general, all classes favor the industrial schools. The workmen warmly approve them. Though their expense is great they have won a place so high that support is as a rule, freely granted to them. These statements apply to the cities and not necessarily to the country. In the country the benefits to be secured, number of workers considered, are not so great, and the cost per pupil is greater. Consequently the country industrial schools are backward as compared with the city schools.

To sum up: The German industrial schools are achieving in large measure the purpose for which they were established—industrial efficiency. They are not yet through developing, nor are their types finally fixed. They constitute a living, growing movement, which gives every promise of increasing in fruitful results on industry and thus on the comfort and culture of the German people.

PART III. CONCLUSION.

CHAPTER XIII.

SOME SUGGESTIONS FOR OUR INDUSTRIAL TRAINING.

The best training now provided for industrial workers other than those definitely preparing for supervisory and technicians' posts, is probably that imparted in a few comparatively large factories where an enlightened and progressive policy of industrial training holds, and where apprenticeship and a factory school cooperate in supplying it. Such are the schools of the General Electric Co., Brown & Sharpe Manufacturing Co., and Baldwin Locomotive Works, in this country, and Siemens & Halske Co. in Germany. Such training we have seen is unfortunately feasible in but few cases. Excellent though this partial solution to the problem is, it does nothing for the mass of our industrial workers.

My inquiries into German industrial training have led me to wish that our own country had not allowed apprenticeship to go into such a decline, and to seek for its revival. Wasteful though the old apprenticeship was of the apprentice's time and effort, apprenticeship in its newer forms, both in Germany and the United States, has in it much of promise for the future training of industrial workers. It is the main reliance as we have seen of Germany in her industrial training, the industrial schools being but supplementary. A visit to Germany is an excellent corrective to the one-sided view often found in our country, which seeks to displace the shop by the industrial school.

Is it not possible to bring about a revival of apprenticeship in this country? It is undoubtedly desirable. No better way, or even as good, has yet been devised for the main training of the mass of industrial workers than in the shops where they are employed and by those who supervise their work. This statement holds of almost all industries, despite the ravages of specialization. Government action (State) might aid in bringing about the wider practice of apprenticeship. Apprentice laws, such as those of the German Empire, might be adopted by the States; or less detailed and thorough laws involving the minimum of Government action in the matter and the maximum of private initiative consistent with the purpose to be attained. But we must not deceive ourselves into thinking that

legislation alone can increase the practice of apprenticeship to any marked degree. Apprenticeship will grow in this country only if there is increased demand for it by boys (and girls) who enter industries, by their parents, and also by employers. Many or most employers, though desirous of obtaining plenty of skilled labor, are all too ready, on account chiefly of the exigencies of competition, to avoid the burden of training workers efficiently.

If those exigencies be so modified by law that all employers alike must pay in the first instance the cost of adequate training of any youthful workers whom they may employ as apprentices, then burdens on the employers will not be serious. Firms employing bona fide apprentices to-day find that their apprenticeship system pays, and indeed were it not so they would scarcely continue the system. In Germany apprentices are regarded as paying, and often as indispensable. This is in part so because adjustments have taken place there, such as would also occur here, placing on consumers or on the apprentices a portion at least of any undue burden at first borne by any particular class or group of employers. The burden might be shifted to consumers in part by raising the prices of products, but this tendency could have but a limited play, because of the tendency of demand to decrease with rise of price. Whatever expense or other burden is incident to the training of apprentices by their employers, being inseparable from and incurred only by their employment, would tend to be charged against the value of their services. The net or true value of their services to their employers would thus be the measure of the wages payable to them. This net value of the apprentice's service is usually very small at first; it increases at an accelerated rate, and sometimes at the close of an apprenticeship is almost as great as that of a journeyman. Thus any cost or burden of apprentice training by employers is likely *generally* to rest chiefly on the apprentices, in the form of lower wage than they could secure were they not learners as well as workers. The small wages which employers can pay apprentices constitute, as we have seen, a serious hindrance to the choice of apprenticeships by parents and boys, especially the latter. This hindrance can be overcome only by education as to the value of skill to the worker.

Apprenticeship, then, from the employers' standpoint, already pays some American employers, and can be made with appropriate laws equalizing competitive conditions in this respect to pay employers generally. Notwithstanding this prospect, a marked demand for apprenticeship is much more likely to come from the boys and girls and their parents than from employers.

In what way, then, if at all, is the demand for apprenticeship on the part of industrial workers to be greatly stimulated? For answer, I believe that the movement for vocational guidance now springing

up in the United States, and with every prospect of rapid spread, is likely to serve as the needed educator and stimulator of demand for apprenticeship. Vocational guidance is not the choice of a vocation for a child, nor the securing of a position for him, though free employment agencies are sometimes closely linked with the movement. It is the aiding of parents and child, by wisely selected data and sympathetic insight into the child's tastes and capacities, to choose wisely a vocation for him or her and to take the proper steps to prepare for it. The extent of this very young movement may be gathered from the facts that "movements to promote vocational guidance have been undertaken in New York, Boston, Chicago, Cleveland, Philadelphia, Pittsburgh, St. Louis, and several other cities," and that "the national conference on vocational guidance, held in Boston on November 15 and 16, 1910, was attended by delegates from 35 cities."[1]

Apprenticeship has declined in recent years for two chief reasons: The employers in many cases refused to accept apprentices or made of their so-called apprenticeship a pretext for unskilled child labor, and the children (or their parents for them) refused to enter apprenticeships in view of the lower beginning wage secured there than in unskilled work. To minimize the latter cause is one of the chief aims of the vocational guidance movement. One of the fundamental failures of our present system is an ignorance of industrial facts on the part of many workers and their children and their short-sighted choice of occupations, almost regardless of the future. A dollar spent now in furthering this movement, designed to aid in every feasible way right choice by children and parents of a vocation, is likely to be of more value than several dollars spent in fully equipped and expensive trade schools.

Increased demand by workers alone for apprenticeship will not suffice to insure its real increase. Many boys now enter shops or factories as "apprentices" only to find that they have been misled and exploited, and are not really being taught a trade, or even a full branch of one. Such cases point to the legitimate function of the State and the way in which law can improve the prospects of apprenticeship. A thoroughly good and modern apprentice law can regulate the conditions of entrance upon and of leaving an apprenticeship, can say who may take and who teach apprentices, can protect both employer and apprentice against breach of contract or other illegal action by the other, and can insure that the training shall be adequate, so far as the degree of specialization in each shop and other conditions permit. The main function of such a law is to protect both parties, and chiefly the apprentice, in actually obtaining what

[1] 25th An. Rept. Com'r of Labor, Ch. XV, Vocational Guidance, pp. 411, 412. Also to be mentioned on this movement is: Meyer Bloomfield—The Vocational Guidance of Youth, 1911.

he seeks and what is claimed to be offered him.[1] Manifestly the execution of such a law requires dealing in technical matters, which is best treated by experts. For this reason semiofficial administrative bodies, made up of employers or of employers and employees, and established in the chief industrial cities or districts of each State, would be of great public service. The chambers of industry of Germany give us the object lesson as to what such bodies can do for industry; we may readily establish similar bodies, modified so far as seem desirable to meet our special needs and ideals. Thus to suit our more democratic practice and ideals, the employees might well be given a larger voice in such bodies than is the case in Germany; and indeed it is unlikely that organized labor would support such a plan were this not done. The German guilds again show us what local employers' associations, such as now exist widely in the United States, can do to further apprenticeship and aid State and chamber of industry in the efficient regulation of employers and apprentices alike.

Revival of apprenticeship alone will not solve the problem, and this chiefly for two reasons: One is the great need for technical knowledge in modern industry; the other is specialization. The need for technical knowledge can be best met in industrial schools. Specialization in industry is a much harder problem to deal with. It is, wherever present, the weak spot of apprenticeship. The Germans, with all their traditional allegiance to apprenticeship and well-rounded trade training, have been forced to capitulate with specialization. Their National Industrial Law declares that a master must train his apprentice in the whole trade for which he is apprenticed, *so far as that is carried on in the master's shop.* Much one-sided training results, which the schools correct in part by a broader view, and sometimes by broader shop practice. At best, specialization now permanently with us tends, with all its high efficiency, toward weakening narrowness for the specialized worker. What we should strive for is such broadening industrial training as will supplement the narrower range of skill and knowledge and give the specialized worker greater resource. Specialization is probably more widespread in the United States than in Germany, and this constitutes an added need which we have for industrial education greater than that present and recognized in Germany.

Industrial schools, then, we must have, and in far greater numbers, to meet the needs of far more workers than at present. Otherwise we can make little claim to really popular education of the sort closest to the worker's activities. Our citizens are already stirred to the

[1] Wisconsin passed, June 15, 1911, an admirable and truly modern apprenticeship law. This law is of such great significance for apprenticeship in this country that it is given in full in Appendix B. The results of this law, modeled on German experience, and to be studied in connection with the Wisconsin compulsory improvement school law of 1911 (the text of which is given at the close of that of the apprenticeship law) are of great interest to those concerned with the problems of apprenticeship and industrial education.

need for industrial education, as attested by a number of new schools recently founded by public funds, and numerous State commissions on the subject. Soon there will be much money spent on industrial schools; and when the American people want something badly, for public or private purposes, they spend money freely. There will be much opportunity for wasting of public funds by unwise choice of the kind of schools to be established and supported. What kind of schools, then, should we develop?

The present is a period of experimentation in industrial education in Europe, and even more so in this country. The nature of the subject is such that theorizing is relatively lacking in significance; experience is the safest guide. It is for this reason chiefly that German experience, probably the ripest and most fruitful in this field of any country, is of so much importance. We must speak cautiously as yet, till our experience be fuller, and must be content in large part to follow the method of experimentation. We must try all things, prove that which is good. Our country is so vast, and so varied in its industries, that there may well be considerable differences in the schools best suited to each section. Yet the types of school are likely to be the same throughout the country, and possibly so throughout the world. The needs of different industries, and even more of different pecuniary classes of workers, are likely to cause even greater differences in the kinds of schools desirable. We must have a number of different kinds of schools, and no amount of planning will enable us to forsee all the special and local modifications that may with advantage arise.

The kinds of industrial schools divide themselves according to categories as fundamental as any into whole-time day schools and part-time schools (day or evening). The importance of this distinction arises from the limitations to the number of workers who can afford to attend the whole-time schools. Possibly at least 30 per cent of the rank and file of workers in our great industrial centers can not, as judged by severe standards of living, afford to keep their children in day school any longer than the law requires.[1] A larger number think themselves unable; others do not think longer school attendance worth while, and thus add to the number of those who, by reason of choice or necessity, will not attend schools that keep them from earning. We can not predict the proportion that will attend day industrial schools; we may assume that it would be more than those who now attend the day schools beyond the legal requirement, but we may be sure that it would be but a small proportion of all industrial workers. German experience bears this out. We are richer per capita and more of our industrial workers may for that reason attend such schools than in Germany.

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[1] Cf. ch. 4, pp. 44–45.

Numerous questions arise with respect to these schools. Shall they be primarily trade schools, aiming to teach the practice as well as theory of the trades, or primarily general industrial schools, giving only a preliminary training before entrance on apprenticeship? Trade schools have so far been the commoner in the United States. Though useful in their sphere, they are subject to serious objections not applying to other types of schools in anything like the same degree. They are very expensive. They usually teach but few trades, and can not teach many without a very great investment in plant, nor can they teach many trades economically without many students. They are subject, with probably no considerable justification in the cases of most, but still subject more than are other types of industrial schools, to trades-union suspicion. To teach a whole trade, they must keep the student three or four years usually, without wage, and even then he must usually serve a year or more as apprentice before becoming a journeyman. Certain phases of trade training, as learning economy of materials, acquiring speed, and numerous others in which few school shops can be fully adjusted to practical trade needs, make the school training no sufficient substitute for shop training. Certain of these difficulties are elastic; they can be and have been overcome, but at best the trade school which acts wholly or chiefly as a substitute for apprenticeship, as ours in the United States do or aim to do, forces itself into the sphere in which schools are weakest and commercial shops are strongest. The stronghold of the commercial shop is practical trade training; that of the industrial school is technical training. Each can undertake the functions in which the other excels, but with the risk of poor results, or what is tantamount, good results achieved at too great cost. Thus technical training is imparted to advantage in but few factories aside from the use of school methods, including the hiring of a special teacher or the turning of the energies of an official largely to the work of a teacher. Our trade schools in this country, in turn, have sometimes not been very practical, and this often because they used school to the exclusion of shop methods. The cost of trade schools is considerable, exceeding that of most other types of industrial schools chiefly in the item of equipment.[1] In addition to this cost, the total cost of trade school training should include the wages foregone by the pupil during the course. The sum of these costs has been great both in mass and also per pupil.

[1] Our data on costs of American industrial schools are very inadequate. An article by H. C. Brandon: "The cost of industrial education in the United States: A study of fifty typical schools," in Teachers College Record, September, 1911, reveals the confusion in the available data from school reports. It shows far greater variation in costs as between individual schools of a given type than between the median costs of different types of schools. The median cost of industrial education in all types of schools is found to be (exclusive of the important element of first cost of building and equipment) $4.80 per pupil per month (based on enrollment), with a median variation of 126 per cent from the median. This figure may be compared with the cost (also excluding first cost of equipment) of $3.20 per pupil per month (based on average daily attendance) in common schools, as stated by Prof. Strayer in "City school expenditures," and quoted by Mr. Brandon.

That boys and young men have entered and completed such schools at all testifies to the difficulty of securing adequate trade training otherwise and to the thoroughness of the school training in some cases. Specialization is largely responsible for the need for such schools. The greater degree of specialization in the United States differentiates our situation from that of Germany. For this reason we need more trade schools, or other schools imparting practical training, than does Germany. But it would be a great mistake to rush pell-mell into establishing trade schools for this reason without thorough investigation in each instance. The main task of practical instruction in industry is best fulfilled by employers.

The cause of practical industrial education would be forwarded by enacting and enforcing suitable apprenticeship laws, by bringing about cooperation between trade associations and the State for the regulation of apprenticeship, by aiding every effort of the vocational guidance movement, or otherwise to promote intelligent and far-sighted choice of occupation, and by providing cheaper and more effective schools for supplementing the practical training to be received in commercial shops and factories.

There is danger that the several States and communities of the United States will waste much money on industrial education; waste by expending great sums which will bring much less return than if spent otherwise, but with the same general aim of bettering industrial training. The greatest caution is imperative in considering the need and probable results and counting the cost in each specific case before increasing the number of trade schools. The trade schools that appear to give the greatest promise of success, both results and cost being considered, are those which might be classed as higher trade schools, designed primarily for the further education of such mechanics as offer themselves, having first learned and practiced their trades. But elementary day trade schools can not, I believe, be satisfactory as our main dependence for industrial education of the masses.

No sharp line differentiates general industrial from trade schools. But the types are different. The general industrial schools are much more feasible than elementary trade schools and, for the mass of workers, more serviceable than any form of trade school. Their course is generally shorter than that of a trade school, their training less specialized for distinct trades. So far as such schools have been established in the United States, which has been but a few years, they have no great number of branches or departments of training. In time they will probably develop more branches of training than the trade schools teach trades, for their training is less elaborate and expensive than that of the trade schools.

Much of the need for such general industrial or preparatory industrial schools has been taken up in chapters 2, 3, and 4. No school in Germany corresponds exactly to these schools, though some

trade schools approximate them. We have greater need than Germany for such schools. One of the greatest differences between the two industrial training situations in the two countries is that in Germany most boys and girls, whether entering skilled or unskilled industries, go to work at the age of 14, while in the United States few employers will accept apprentices for the skilled trades younger than 16. The German practice has become so rooted in habit that the Germans neither ordinarily question its expediency, nor do they generally give very definite reasons for the existence of the custom. Poverty is doubtless largely responsible for it, and in this respect we probably have the advantage. Probably a larger number of our families can afford to keep their boys from work until they are 15 or 16, if they consider this worth while, than in Germany. This possibility is to be regarded as a national asset. The question then arises: What shall be done with the years between 14 and 16 of those who leave the common school at the earlier age, and enter the skilled trades? The preparatory industrial school suggests an answer applicable to many boys and girls. A much larger number of boys and girls will probably be able and willing to attend a general industrial school for one or two years between the time when they leave the common school and the entry on apprenticeship in a skilled trade than would be able and willing to make the sacrifice for a longer trade-school training. Such attendance will cost both them and the public less than trade-school training, but will doubtless give the sort of practical as well as theoretical training which broadens the industrial outlook of the pupils and makes them familiar with the elements both of the theory and practice of a broad range of operations. Shops will be found in such schools though not necessarily such complex shops as in trade schools.

The training thus given, essentially preparatory, elementary, and broadening, can be made, I believe, the best gateway to apprenticeship training for a large number of workers. The pupils of such schools (and of trade schools) are most likely to be acceptable to employers as apprentices in the skilled trades. Both types of schools are likely to shorten the apprenticeship coming after school attendance, and such shortening, if not extreme, should not arouse the antagonism of the trade unions. Its type of work will also doubtless be of much value to correct the one-sided specialization to which many or most of its pupils will later be subject. One of the chief reasons for trade schools in our country is this need of correcting specialization. As stated above, we can not expect, by any sort of apprenticeship law or otherwise, to greatly change the extent of specialization in industry. However, the general industrial schools will, I believe, prove themselves as capable as the trade schools of correcting one-sided specialization. Certainly, if their result on each

pupil in this respect be nearly as great as that of the trade schools, it will be attained at less cost and will benefit greater numbers.

Both industrial and trade schools raise a question, one suggested by the almost invariable German practice of obtaining the first industrial training in the commercial shop. Shall we do likewise? Obviously for those of our boys and girls who enter the skilled trades at an age not earlier than 15 or 16 years, and leave common school at 14, this is impossible. For such youthful workers the best plan, if they can afford it, is to attend a general industrial or trade school during the interval. Wherever the particular situation does not forbid it, however, it is throughly desirable to apply the German principle. In passing, I may say that one point of distinct superiority of the German higher technical education (except in the technical high school) to that in the United States, is that in Germany a considerable amount of practical work must precede the theoretical. The truth of this superiority is beginning to be realized here, especially when the superior results are noted of cooperation between technical colleges and commercial shops, as in the case of the University of Cincinnati.

With only the types of schools so far discussed, we shall not yet have achieved really popular industrial education in large measure. The masses will probably be unable, will consider themselves unable, or will for other reasons fail to attend these schools. The type of school which best meets the needs of the great masses of industry, both skilled and unskilled, is the improvement school. The need for schools of this type is undoubted. More and more its virtues are being appreciated in this country. We now have such schools in Cincinnati and Boston, and in Wisconsin; they are advocated by educators for New York City, and we may expect their rapid spread. Their advantages are manifold. They can be made to meet the needs for industrial training of all not better cared for. They are flexible and require a comparatively small plant. They are cheap—an aspect of great importance. Industrial education is at best expensive, and its expense is likely to cause the undue curtailment of facilities in many localities, such that the needs of some workers will not be met. In the past we have furnished comparatively large facilities for industrial education for the few, but insignificant facilities for the many. In the past this direct neglect of the many was involved in the best use of small facilities. With but few industrial schools, the need for higher technical training was so great that some schools were drawn from service to the ranks of industry, to service of the technical leaders. The needs for higher technical training are now well met. The great present call is for such industrial education as will directly help the masses. The improvement school has been found in Europe,

and especially in Germany, to be the most efficient instrument for the attainment of this end. There is every reason to believe that a similar efficiency will result in this country from their establishment here. Industrial improvement schools, for reasons already fully discussed, should most certainly be in the daytime. German experience emphatically approves of this practice. Shall attendance be voluntary or compulsory? The history of compulsory daytime attendance in Germany will probably be repeated in the United States wherever the like compulsion is adopted: First, opposition from employers; later, acquiescence. The example of German and other employers who now tolerate or even desire compulsory attendance may and should make the period of adjustment of employers to the new situation shorter and easier. German experience has amply shown that voluntary improvement schools accomplished but little as compared with the same schools when made compulsory. The number of pupils reached was far greater and the average quality of work usually but little lower. However much many of our employers as men may wish to see the welfare of their youthful workers subserved, the stern necessities of competition force them not to do anything which will lessen the efficiency of their shops as measured in dollars and cents, and often force them even to neglect ultimate advantage for present gain. If we are serious in our desires to prevent exploitation of our child workers, one of the surest ways to protect them is to require their attendance at a school which will aid them to attain industrial efficiency. Such compulsory attendance might well be, as in much of Germany, for three years or until the ending of the term in which the eighteenth birthday is reached. The number of hours a week, the hours when these should meet, and the number of classes for pupils in different trades and occupations are matters to be decided locally and experimentally in large part. It may prove desirable to open the improvement schools first as evening schools, where the employers are strongly opposed to compulsory day attendance. Later, when they see the good results of these schools, the classes may be shifted to the daytime. Likewise the attendance may be voluntary for a time, until the schools have won the approval of the employers and others, and later compulsory. It is most probable that such schools will be first established in this country as voluntary schools.

The improvement schools can probably have separate classes, as in Berlin and Munich, for those in many different trades and occupations. They are much better able to do this than are full-time trade or general industrial schools, because they will have less extensive shop equipment and because the number of pupils in the improvement schools will probably far exceed those in other industrial schools. With regard to the comparative importance of improve-

ment and other schools, Dr. A. A. Snowden says, "throughout the civilized world the evening (or part-time day) industrial improvement school enrolls 20 pupils to every 1 who attends the other types of industrial vocational school." [1] The matter of shop equipment raises the question as to how much practical workshop instruction should be given in these schools. Without reviewing the German experience on this point, we may note at once a difference in German and American needs. Our industries are more specialized, and the need for correction of one-sided training is therefore greater. Such correction can best be done in schools, and to be at all efficient needs workshop instruction, for many of our workers never perform the operations of more than a narrow branch of a trade. Thus, in improvement schools, as in other industrial schools, workshops are more needed than in Germany. Whether this need is so great as to justify improvement schools in which most of the instruction is given in the school shop, and the lesser portion only is technical (theoretical) training, is very doubtful, but must be worked out by experiment. If our improvement schools have more workshops than those in Germany, as they should have, their cost will be correspondingly greater. Notwithstanding this greater cost, they will remain probably the cheapest and most efficient type of industrial school.

Intermediate between the improvement schools, which take but 4 to 10 hours a week of the worker's time, and the full-time trade or preparatory industrial schools are a number of part-time schools. The specific divisions of time between school and shop are various. These schools are growing rapidly, and with good reason, for they furnish for those pupils who can afford it one of the best means of learning thoroughly both the theory and practice of their trade. Such part-time schools are one of the chief contributions of the United States to the world problem of industrial education. Improvement schools may be classed as part-time schools, but the term is used chiefly for schools which occupy a larger portion of the worker's time.

The control of the industrial schools of all types is best vested, according to German and other experience, in some body or bodies not dominated by the schoolmen, but which receive the aid of competent educational experts. State aid, and accompanying measure of control and standardization, is likely to play a large and effective part in our future industrial education, as it has in Germany. Employers should be represented on school boards, as in Germany, but, as is seldom done there, workers also should be allowed a place. The industrial schools should keep in the closest touch with each of these classes. Only by such close touch with, and real control by, the two classes most directly affected can our industrial education be made both efficient and truly democratic.

[1] Rep. of N. J. Commis. on Indus. Educ., 1909, p. 7.

APPENDIX A.

A GERMAN APPRENTICE CONTRACT.

The following apprentice contract is executed between the firm of Friedrich Krupp, share company in Essen on the Ruhr, and (apprentice's name), born at (place of birth), to (name of parents), accompanied by his (parent or guardian, and name) as his legal representative.[1]

SECTION 1.—The firm accepts (apprentice's name) as apprentice for their cast-steel factory and obligates themselves to have him trained as a (trade or branch in which apprenticed) under the direction of a suitable representative. The apprentice is thrown under the fatherly authority of the representative.

SEC. 2.—The apprentice is obligated to obedience and truth, to industry and proper conduct.

He must regularly attend, under the direction of the firm, an improvement school, and present the certificate there obtained, immediately on its receipt, to the official set over him.

SEC. 3.—The apprentice is responsible for his support and for all other things necessary, with the exception of the tools necessary to his work.

He shall receive from the day of his entrance on apprenticeship[2] pay for each working day, which shall depend on his conduct, ability, and efficiency, according to the following scheme:

Daily pay of apprentices.

Age of entrance.	Year of apprenticeship.		
	First.	Second.	Third.
	Marks.	*Marks.*	*Marks.*
Between 14 and 15 years	0.50–0.70	0.80–1.00	1.10–1.50
Between 15 and 16 years	.70– .90	1.00–1.20	1.40–1.80

Qualified apprentices may be allowed to undertake piecework in their third year, and for this receive up to 50 pfennigs a day in excess of their daily wage.

No subtraction from the wage of the apprentice shall be made for the working hours in which he attends improvement school.

SEC. 4.—The apprenticeship begins with the (date) and lasts three years. Work days in which the apprentice has neglected (his work) shall not be included in the reckoning of the length of apprenticeship, but so much more must be added. With good conduct and efficiency, the repetition of neglected days to a maximum of 25 may be remitted.

SEC. 5.—The first three months of the apprenticeship are a period of probation, during which either party may withdraw from the apprentice contract.

After the probation period the firm is authorized to discharge the apprentice at once before the ending of the contractual time in the cases stated in section 123 of the National Industrial Law (see supplement [3]), or when he has repeatedly violated his

[1] A guardian, to execute an apprentice contract, must receive the approval of the guardianship court.

[2] Before entering on apprenticeship in the Krupp works, a boy must first serve a year as errand boy or in similar capacity.

[3] Sec. 123 is given in full; cf. ch. 7, p. 15.

duties of obedience and truth, industry and proper conduct, or neglected his attendance on improvement or trade school. (Sec. 2.)

SEC. 6.—On the part of the apprentice, the apprenticeship may be ended in the cases of section 124, numbers 1, 3, 4, and 5 of the National Industrial Law (see supplement),[1] and also if the firm neglects their legal duties toward the apprentice in a manner dangerous to his health, his morals, or his training, or misuses the right of fatherly authority, or becomes unable to fulfill their contractual duties.

SEC. 7.—On the close of the apprenticeship a certificate shall be given to the apprentice concerning the length of the apprenticeship and the knowledge and skill acquired during it, as well as concerning his conduct. An apprentice letter (Lehrbrief) shall be given only when the contractual period of apprenticeship has been completed or shortened with approval of the firm.

SEC. 8.—The firm reserves to itself the payment to the apprentice on regular completion of apprenticeship, when his conduct and efficiency was, according to the decision of the official in charge, good, of a reward not to exceed 150 marks.

The firm decides according to its free judgment whether the payment is to be refused wholly or in part, and whether it is to be made to the apprentice himself or to his legal representative.

SEC. 9.—Subject to the provisions of this contract, the apprentice is subject to all regulations for the workers of the cast-steel factory, especially the work regulations.

For other matters, so far as there are no regulations in the present contract, the provisions of the National Industrial Law apply.

SEC. 10.—Apprentices who remain at the steel factory after the close of their apprenticeship shall, on continued good conduct and efficiency, so far as possible, be given opportunity to train themselves further and to progress.

Essen/Ruhr, the (date)

....

(Signature of the apprentice.) (Signature of the legal representative.)

Fried. Krupp
Aktiengesellschaft.
Das Direktorium.

The above apprentice contract is that used in the great Krupp works, employing 30,000 men, besides officials. The normal contract forms of the chambers of industry for handwork in Prussia are very long and provide for almost all questions that might arise under the apprenticeship. Their main provisions are presented in the exposition of the National Industrial Law, in chapter 7. Different forms of contracts are sometimes used for handworkers and for factory workers.

[1] Sec. 124 is given in full; cf. ch. 72, p. 16.

APPENDIX B.

THE WISCONSIN APPRENTICE LAW OF 1911.[1]

SEC. 2377. Every contract or agreement entered into between a minor and employer by which the minor is to learn a trade shall be known as an indenture, and shall comply with the provisions of sections 2378 to 2386, inclusive, of the statutes. Every minor entering into such a contract shall be known as an apprentice.

SEC. 2378. Any minor may, by the execution of an indenture, bind himself as hereinafter provided, and such indenture may provide that the length of the term of the apprentice shall depend on the degree of the efficiency reached in the work assigned, but no indenture shall be made for less than one year, and if the minor is less than eighteen years of age the indenture shall in no case be for a period of less than two years.

SEC. 2379. Any person or persons apprenticing a minor or forming any contractual relation in the nature of an apprenticeship without complying with the provisions of sections 2377 to 2387, inclusive, of the statutes, shall, upon conviction thereof, be punished by a fine of not less than fifty nor more than one hundred dollars.

SEC. 2380. It shall be the duty of the commissioner of labor, the factory inspector, or assistant factory inspectors to enforce the provisions of this act and to prosecute violations of the same before any court of competent jurisdiction in this State.

SEC. 2381. Every indenture shall be signed:

(1) By the minor.

(2) By the father; and if the father be dead or legally incapable of giving consent, or has abandoned his family, then

(3) By the mother; and if both the father and the mother be dead or legally incapable of giving consent, then

(4) By the guardian of the minor, if any.

(5) If there be no parent or guardian with authority to sign, then by two justices of the peace of the county of residence of the minor.

(6) By the employer.

SEC. 2382. Every indenture shall contain:

(1) The names of the parties.

(2) The date of the birth of the minor.

(3) A statement of the trade the minor is to be taught, and the time at which the apprenticeship shall begin and end.

(4) An agreement stating the number of hours to be spent in work, and the number of hours to be spent in instruction. The total of such number of hours shall not exceed fifty-five in any one week.

(5) An agreement that the whole trade, as carried on by the employer, shall be taught, and an agreement as to the time to be spent at each process or machine.

(6) An agreement between the employer and the apprentice that not less than five hours per week of the aforementioned fifty-five hours per week shall be devoted to instruction. Such instruction shall include—

(*a*) Two hours a week instruction in English, in citizenship, business practice, physiology, hygiene, and the use of safety devices.

(*b*) Such other branches as may be approved by the State board of industrial education.

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[1] Laws of Wisconsin relating to employment of women and children, industrial education and truancy. Wisconsin State Bd. of Indus. Educ., Bull. no. 1., pp. 24–26.

(7) A statement of the compensation to be paid the apprentice.

SEC. 2383. The instruction specified in section 2382 may be given in a public school, or in such other manner as may be approved by the local board of industrial education; and if there be no local board, subject to the approval of the State board of industrial education. Attendance at the public school, if any, shall be certified to by the teachers in charge of the courses, and failure to attend shall subject the apprentice to the penalty of a loss of compensation for three hours for every hour he shall be absent without good cause. It shall be the duty of the school officials to cooperate for the enforcement of this law.

SEC. 2384. It shall be lawful to include in the indenture or agreement an article stipulating that during such period of the year as the public schools shall not be in session the employer and the apprentice may be released from those portions of the indenture which affect the instruction to be given.

SEC. 2385. If either party to an indenture shall fail to perform any of the stipulations, he shall forfeit not less than ten nor more than fifty dollars on complaint, the collection of which may be made by the commissioner of labor, factory inspector, or assistant factory inspectors in any court of competent jurisdiction in this State. Any court of competent jurisdiction may, in its discretion, also annul the indenture. Nothing herein prescribed shall deprive the employer of the right to dismiss any apprentice who has willfully violated the rules and regulations applying to all workmen.

SEC. 2386. The employer shall give a bonus of not less than fifty dollars to the apprentice on the expiration of the term of the indenture, and also a certificate stating the term of the indenture.

SEC. 2387. A certified copy of every indenture by which any minor may be apprenticed shall be filed by the employer with the State commissioner of labor.

This apprentice law, the most advanced in the United States, is in several respects very like the German national law, described in chapter 7. It is to be studied in connection with the Wisconsin compulsory improvement school attendance law of 1911, which is here given:

CONTINUATION AND EVENING SCHOOLS.[1]

(SECTION 1728c–1) 1. Whenever any evening school, continuation classes, industrial school, or commercial school shall be established in any town, village, or city in this State for minors between the ages of fourteen and sixteen working under permit as now provided by law, every such child residing within any town, village, or city in which any such school is established shall attend such school not less than five hours per week for six months in each year until such child becomes sixteen years of age, and every employer shall allow all minor employees over fourteen and under sixteen years of age a reduction in hours of work of not less than the number of hours the minor ..... is by this section required to attend school.

[1] Laws of Wisconsin relating to employment of women and children, industrial education and truancy. Wisconsin State Bd. of Indus. Educ. Bull. no. 1, p. 10.

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A "MOONLIGHT SCHOOL" IN ROWAN COUNTY, KY.

Sixty-five pupils were enrolled, and 23 of them were illiterate when they entered; 3 were preachers.

UNITED STATES BUREAU OF EDUCATION
BULLETIN, 1913, NO. 20 - - WHOLE NUMBER 530

ILLITERACY IN THE UNITED STATES

AND AN

EXPERIMENT FOR ITS ELIMINATION

WASHINGTON
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., April 4, 1913.

SIR: I submit herewith, for publication as a bulletin of the Bureau of Education, a statement showing in some detail the amount of illiteracy in the United States among men, women, and children over 10 years of age according to the Federal Census of 1910; also a brief statement of an experiment which has been conducted for nearly two years in one of the mountain counties of eastern Kentucky having a large number of illiterates in its population, to ascertain if it were possible to teach these illiterate grown-up men and women and older children to read and write, and whether other men, women, and children with very meager education would respond to the opportunity to learn more of the arts of the school. The success of this experiment, made under very difficult circumstances, has been so great as to inspire the hope that, with the cooperation of schools, churches, philanthropic societies, cities, counties, States, and the Nation, the great majority of the five and one-half million illiterates over 10 years of age in the United States may, in a few years, be taught to read and write, and something more; while millions of those whose school days were very few and who are little above the line of total illiteracy may be helped to make good to some extent their deficiencies due to lack of opportunity in childhood.

This bureau expects to have ready for publication soon some account of other efforts in this country to teach illiterates to read and write, and also some account of the efforts which some foreign countries have made to eliminate illiteracy. These statements are submitted for publication at this time because of the fact that a bill, introduced near the close of the last session of the Sixty-second Congress, looking to the reduction of adult illiteracy in this country will probably be introduced early in the Sixty-third Congress.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

ILLITERACY IN THE UNITED STATES AND AN EXPERIMENT FOR ITS ELIMINATION.

The Federal Census for the year 1910 shows that at the time the census was taken there were in the United States 5,516,163 persons 10 years of age and over unable to read and write. This was 7.7 per cent of the total population 10 years of age and over. The full meaning of these figures will be better understood when it is remembered that the number of illiterate persons 10 years of age and over in the United States is less by only a few thousands than the total population 10 years of age and over in all the New England States, or in the States of Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California, and more than the population 10 years of age and over in the cities of Boston, Baltimore, Washington, Buffalo, Cleveland, Detroit, Cincinnati, Pittsburgh Indianapolis, Louisville, New Orleans, St. Louis, Kansas City, Minneapolis, St. Paul, Seattle, Spokane, San Francisco, and Los Angeles. In double line of march, at intervals of 3 feet, these 5,516,163 illiterate persons would extend over a distance of 1,567 miles—more than twice the distance from Washington City to Jacksonville, Fla. Marching at the rate of 25 miles a day, it would require more than two months for them to pass a given point. A mighty army is this, with their banners of blackness and darkness inscribed with the legends of illiteracy, ignorance, weakness, helplessness, and hoplessness—too large for the safety of our democratic institutions, for the highest good of society, and for the greatest degree of material prosperity.

Their ignorance is not wholly nor chiefly their own fault. To a large degree it is due to the lack of opportunity, because of the poverty or negligence of the States and communities in which they spent their childhood.

Of these illiterates, 3,184,633, or 58 per cent, were white persons, 1,534,272, or 28 per cent, were native-born whites, and 1,650,361, or 30 per cent, foreign-born whites; 2,227,731, or 40 per cent, were negroes. The remaining 2 per cent were Indians, Chinese, Japanese, and others.

Of the total number of illiterates, 1,768,132 lived in urban communities and 3,748,031 in rural communities, in small towns, villages, and the open country. Of the urban population, 5.1 per cent were illiterate· of the rural population, 10.1 per cent.

Of the total rural population of the United States, 4.8 per cent of the native white persons and 40 per cent of the negroes 10 years of age and over were illiterate.

Of the urban population, 0.8 per cent of the native white persons and 17.6 per cent of the negroes were illiterate. The per cent of illiterates among the foreign-born whites of the urban population was much larger than that of the native white population. In the New England, Middle Atlantic, and East North Central States, the percentage of illiteracy was greater in the urban than in the rural population. For the rest of the country, illiteracy in the rural population was from two to five times greater than in the urban population.

The following tables show that the per cent of illiteracy in the population from 10 to 20 years old was much less than in the population over 20 years of age. Of the total 5,516,163 illiterates, only 818,550 were between the ages of 10 and 20, while 4,697,613 were over 20.

ILLITERATES BY AGE PERIODS.

		Per cent.
10 to 14 years of age:		
Total	370,136	4.1
White	144,675	1.8
Negro	218,555	18.9
15 to 19 years of age:[1]		
Total	448,414	4.9
White	226,432	2.8
Negro	214,860	20.3
Males nearly 50 per cent.		
20 to 24 years of age:		
Total	622,073	6.9
White	367,669	4.6
Negro	245,860	23.9
25 to 34 years of age:		
Total	1,102,384	7.3
White	702,962	5.2
Negro	380,742	24.4
35 to 44 years of age:		
Total	940,510	8.1
White	569,403	5.4
Negro	152,132	27.7
45 to 64 years of age:		
Total	1,436,907	10.7
White	821,957	6.7
Negro	584,514	52.7
65 years of age and over:		
Total	573,799	14.5
White	342,420	9.4
Negro	219,255	74.5

[1] The proportion of illiterates among males 15 to 19 years of age was nearly 50 per cent greater than that among females of the same age.

The census reports show that in 1910 there were 2,273,603 illiterate males of voting age, that is, 21 years of age and over, of whom 617,733 were native-born whites, 788,631 foreign-born whites, and 819,135 negroes. The per cent of illiteracy of the total male population of voting age was 8.4; of the native-born white men, 4.1; of the foreign-born white men, 11.9; of the negroes, 33.7. The total number of illiterate men of voting age in the entire country was greater than the total number of men of voting age in the States of Kentucky, Tennessee, Alabama, Mississippi, Delaware, and the District of Columbia. In some States, and in many counties, the illiterate voters hold the balance of power in any closely contested election.

The problem of adult illiteracy is no longer one of race or of section. In 1910 the total number of white illiterates was greater by 956,902 than the total of negro illiterates, and the number of illiterate white men of voting age was greater by 585,229 than that of illiterate negroes of voting age. Massachusetts had 7,469 more illiterate men of voting age than Arkansas; Michigan, 2,663 more than West Virginia; Maryland, 2,352 more than Florida; Ohio, more than twice as many as New Mexico and Arizona combined; Pennsylvania, 5,689 more than Tennessee and Kentucky combined.

Boston had 24,468 illiterates over 10 years of age; Baltimore, 20,325; Pittsburgh, 26,627; New Orleans, 18,987; Fall River, 12,276; Birmingham, 11,026; Providence, 14,236; Nashville, 7,947; Washington City, 13,812; Memphis, 8,855.

The per cent of illiterates in the population over 10 years of age was, in New Bedford, Mass., 12.1; in Dallas, Tex., 4; in Lawrence, Mass., 13.2; in Wheeling, W. Va., 3.2; in Amsterdam, N. Y., 10.3; in Little Rock, Ark., 6.5; in Passaic, N. J., 15.8; in Augusta, Ga., 10.9; in Green Bay, Wis., 5.7; in Paducah, Ky., 1.8; in Woonsocket, R. I., 9.1; in Dubuque, Iowa, 0.9; in Bayonne, N. J., 9.1; in Knoxville, Tenn., 6.5; in Utica, N. Y., 8.2; in Roanoke, Va., 6.9.

These figures indicate that, if all classes of population are considered, no section can claim even approximate freedom from adult illiteracy.

The tables following show: (1) Number of illiterates in 1910 who were 10 years of age and over; (2) illiterate males 21 years of age and over in 1910; (3) per cent of illiteracy in cities having 100,000 population and over in the United States, 1910; (4) per cent of illiteracy in cities having 25,000 to 100,000 population in the United States, 1910.

Number of illiterates in 1910 who were 10 years of age and over.

States.	All classes.	Native whites.	Foreign-born whites.	Negroes.
Alabama	352,710	84,768	2,063	265,628
Arizona	32,953	3,776	13,758	122
Arkansas	142,954	55,025	1,466	86,398
California	74,902	7,509	50,292	1,329
Colorado	23,780	8,133	13,897	856
Connecticut	53,665	3,583	49,202	792
Delaware	13,240	3,525	3,359	6,345
District of Columbia	13,812	960	1,944	10,814
Florida	77,816	14,871	3,390	59,503
Georgia	389,775	80,203	875	308,639
Idaho	5,453	707	2,742	37
Illinois	168,294	40,486	117,751	9,713
Indiana	66,213	40,955	18,200	6,959
Iowa	29,889	11,541	16,894	1,272
Kansas	,28,968	9,472	13,787	5,341
Kentucky	208,084	146,797	3,300	57,900
Louisiana	352,179	85,359	12,085	254,148
Maine	24,554	9,824	14,394	93
Maryland	73,397	18,952	12,047	42,289
Massachusetts	141,541	9,163	129,412	2,584
Michigan	74,800	17,846	54,113	826
Minnesota	49,336	5,838	40,627	215
Mississippi	290,235	28,699	1,364	259,438
Missouri	111,116	65,242	22,631	23,062
Montana	14,457	736	8,445	114
Nebraska	18,009	4,278	12,264	482
Nevada	4,702	187	1,344	26
New Hampshire	16,386	2,839	13,485	51
New Jersey	113,502	12,253	93,551	7,405
New Mexico	48,697	30,338	6,580	191
New York	406,020	36,318	362,025	5,768
North Carolina	291,497	132,189	477	156,303
North Dakota	13,070	1,413	9,474	26
Ohio	124,774	47,310	66,887	10,460
Oklahoma	67,567	33,569	3,828	17,858
Oregon	10,504	1,841	6,120	46
Pennsylvania	354,290	59,680	279,668	14,638
Rhode Island	33,854	3,253	29,781	752
South Carolina	276,980	50,245	399	226,242
South Dakota	12,750	1,239	4,896	38
Tennessee	221,071	120,966	1,488	98,541
Texas	282,904	90,591	67,295	124,618
Utah	6,821	832	3,636	49
Vermont	10,806	4,495	6,239	69
Virginia	232,911	81,457	2,368	148,950
Washington	18,416	1,836	11,233	239
West Virginia	74,866	51,407	13,075	10,347
Wisconsin	57,769	11,468	43,662	113
Wyoming	3,874	298	2,548	102
United States	5,516,163	1,534,272	1,650,361	2,227,731

Illiterate males 21 years of age and over in 1910.

States.	All classes.	Native whites.	Foreign-born whites.	Negroes.
Alabama	124,494	30,633	1,028	92,744
Arizona	14,463	1,297	7,447	64
Arkansas	53,440	20,728	661	32,013
California	42,787	3,175	28,921	556
Colorado	11,343	2,936	7,468	373
Connecticut	23,562	1,637	21,532	314
Delaware	6,272	1,740	1,692	2,829
District of Columbia	5,082	391	810	3,801
Florida	29,886	5,189	1,439	23,219
Georgia	141,541	30,085	376	111,037
Idaho	3,416	353	2,036	16
Illinois	79,433	18,863	55,907	4,349
Indiana	33,583	19,594	10,602	3,312
Iowa	14,204	5,675	7,779	626
Kansas	14,716	4,647	7,497	2,380
Kentucky	87,516	60,147	1,382	25,958
Louisiana	118,716	29,026	5,211	84,176
Maine	13,070	5,222	7,676	55
Maryland	31,238	8,620	5,037	17,484
Massachusetts	61,909	3,872	56,504	1,186
Michigan	38,703	9,398	28,034	397
Minnesota	23,603	2,489	19,947	123
Mississippi	107,843	11,270	593	95,702
Missouri	51,284	30,217	10,848	10,068
Montana	8,812	394	5,885	75
Nebraska	8,545	2,044	5,886	231
Nevada	2,399	95	968	15
New Hampshire	8,413	1,468	6,909	29
New Jersey	51,086	5,423	42,347	3,052
New Mexico	16,634	8,680	3,630	88
New York	170,563	17,826	148,703	2,295
North Carolina	107,563	49,710	274	56,669
North Dakota	5,467	493	4,029	16
Ohio	62,998	22,567	35,160	5,169
Oklahoma	28,707	14,824	2,188	7,396
Oregon	6,460	914	4,033	24
Pennsylvania	179,982	23,625	149,592	6,479
Rhode Island	14,456	1,260	12,793	345
South Carolina	90,707	17,599	206	72,857
South Dakota	5,550	604	2,323	24
Tennessee	86,677	47,743	628	38,273
Texas	109,328	31,196	28,191	49,699
Utah	3,477	372	1,959	26
Vermont	6,039	2,561	3,439	38
Virginia	92,917	33,680	1,297	57,867
Washington	10,580	840	6,993	121
West Virginia	35,040	21,022	8,528	5,457
Wisconsin	27,038	5,432	20,433	58
Wyoming	2,594	157	1,810	50
United States	2,273,603	617,733	788,631	819,135

Per cent of illiteracy in cities having 100,000 population and over in the United States, 1910.

Cities.	In population 10 years of age and over.				Males 21 years of age and over.			
	All classes.	Native white.	Total white.	Negro.	All classes.	Native white.	Total. white.	Negro.
Albany, N. Y	3.2	0.4	3.2	4.2	3.8	0.4	3.8	5.0
Atlanta, Ga	8.6	2.0	2.2	20.9	8.1	1.6	1.9	21.7
Baltimore, Md	4.4	0.6	2.8	13.2	4.7	0.6	3.0	13.4
Birmingham, Ala	10.4	1.2	2.4	22.1	10.7	0.9	2.3	23.0
Boston, Mass	4.4	0.2	4.4	3.5	4.5	0.2	4.5	2.6
Bridgeport, Conn	5.4	0.3	5.4	5.2	5.5	0.3	5.5	4.9
Buffalo, N. Y	3.7	0.4	3.7	4.1	4.4	0.5	4.4	5.4
Cambridge, Mass	3.0	0.2	2.9	5.6	3.2	0.1	3.1	5.3
Chicago, Ill	4.5	0.2	4.5	4.0	5.1	0.2	5.1	3.1
Cincinnati, Ohio	3.1	0.8	2.4	14.3	3.5	0.8	2.6	16.0
Cleveland, Ohio	4.6	0.2	4.6	4.1	5.3	0.2	5.3	3.8
Columbus, Ohio	2.9	1.2	2.4	8.7	3.4	1.0	2.9	9.1
Dayton, Ohio	2.3	0.5	2.0	9.5	2.8	0.6	2.4	10.9
Denver, Colo	2.1	0.3	2.0	6.0	2.2	0.3	2.0	5.0
Detroit, Mich	5.0	0.4	5.0	3.5	6.5	0.4	6.5	3.2
Fall River, Mass	13.2	1.7	13.2	8.1	15.6	2.1	15.7	4.5
Grand Rapids, Mich	2.5	0.2	2.5	4.8	2.7	0.2	2.7	3.4
Indianapolis, Ind	3.0	0.9	2.0	12.4	3.5	0.9	2.5	13.1
Jersey City, N. J	5.6	0.4	5.6	4.9	6.8	0.3	6.9	3.6
Kansas City, Mo	2.3	0.4	1.5	9.6	2.3	0.4	1.6	8.6
Los Angeles, Cal	1.9	0.2	1.7	6.0	2.0	0.2	1.8	4.5
Louisville, Ky	5.3	1.2	2.1	18.7	5.9	1.4	2.3	20.3
Lowell, Mass	6.0	0.5	6.0	2.7	7.2	0.6	7.3	0.0
Memphis, Tenn	8.0	0.5	1.4	17.6	7.1	0.3	1.2	16.4
Milwaukee, Wis	3.6	0.2	3.6	2.9	4.6	0.3	4.6	2.3
Minneapolis, Minn	2.4	0.2	2.4	2.9	2.6	0.2	2.6	3.2
Nashville, Tenn	8.8	1.6	1.9	22.0	9.4	1.9	2.1	25.3
New Haven, Conn	7.0	0.3	7.0	4.5	7.5	0.2	7.6	4.0
New Orleans, La	6.9	1.1	2.7	18.3	6.5	0.9	2.6	17.1
New York, N. Y	6.7	0.3	6.7	3.6	6.4	0.3	6.5	2.9
Newark, N. J	6.0	0.5	5.9	7.5	6.0	0.5	6.0	7.2
Oakland, Cal	3.0	0.4	2.8	3.3	3.5	0.4	3.3	2.7
Omaha, Nebr	2.7	0.2	2.5	6.3	3.3	0.3	3.2	5.8
Paterson, N. J	6.9	0.8	6.8	11.3	7.0	0.8	6.9	11.0
Philadelphia, Pa	4.6	0.5	4.4	7.8	4.7	0.6	4.5	7.5
Pittsburgh, Pa	6.2	0.4	6.2	6.6	8.5	0.5	8.6	7.1
Portland, Oreg	1.2	0.1	1.1	1.9	1.3	0.1	1.2	1.3
Providence, R. I	7.7	0.7	7.7	9.7	8.3	0.7	8.2	10.6
Richmond, Va	8.2	1.2	1.5	19.6	8.6	1.4	1.7	20.8
Rochester, N. Y	3.8	0.3	3.8	1.4	4.5	0.3	4.5	2.0
St. Louis, Mo	3.7	0.6	3.0	12.4	4.1	0.6	3.5	11.4
St. Paul, Minn	2.1	0.2	2.1	2.3	2.2	0.2	2.2	1.7
San Francisco, Cal	2.1	0.2	1.9	5.1	2.0	0.2	1.7	5.2
Scranton, Pa	8.9	0.9	8.9	3.3	12.2	1.1	12.2	2.3
Seattle, Wash	1.1	0.1	1.0	2.7	1.4	0.0	1.3	2.0
Spokane, Wash	1.3	0.1	1.1	2.4	1.8	0.0	1.5	1.3
Syracuse, N. Y	4.9	0.5	4.9	5.1	6.3	0.5	6.3	6.2
Toledo, Ohio	2.8	0.7	2.7	4.3	3.4	1.0	3.4	4.2
Washington, D. C	4.9	0.5	1.5	13.5	4.9	0.6	1.6	13.8
Worcester, Mass	5.0	0.4	5.1	3.5	6.0	0.4	6.0	2.3

Per cent of illiteracy in cities having 25,000 to 100,000 population in the United States, 1910.

Cities.	In population 10 years of age and over.				Males 21 years of age and over.			
	All classes.	Native white.	Total white.	Negro.	All classes.	Native white.	Total white.	Negro.
Alabama:								
Mobile	12.3	0.8	1.2	25.9	11.6	0.5	1.1	25.1
Montgomery	13.4	0.9	1.1	25.1	11.7	0.6	0.7	24.6
Arkansas:								
Little Rock	6.5	1.9	2.0	15.8	6.3	1.9	2.0	15.7
California:								
Berkeley	1.4	0.1	1.2	3.8	2.0	0.1	1.8	.....
Pasadena	1.2	0.4	0.9	6.0	1.7	0.5	1.2	4.0
Sacramento	1.4	0.2	1.2	5.5	1.4	0.1	1.1	4.3
San Diego	1.6	0.3	1.4	9.6	1.8	0.3	1.7	9.9
San Jose	3.2	0.4	3.0	2.5	3.8	0.5	3.3	.....
Colorado:								
Colorado Springs	0.9	0.2	0.6	6.9	1.0	0.3	0.8	4.7
Pueblo	5.6	0.9	5.4	10.6	7.1	1.2	6.9	12.2
Connecticut:								
Hartford	5.0	0.3	5.0	4.8	5.0	0.3	5.0	4.6
Meriden town	4.2	0.3	4.2	2.7	4.6	0.4	3.9	.....
New Britain	9.2	0.3	9.3	.....	9.1	0.5	9.1	.....
Norwich town	6.6	0.6	6.4	12.3	7.2	0.7	6.9	15.2
Stamford town	6.0	0.4	6.0	4.5	5.8	0.5	5.8	.....
Waterbury	6.2	0.3	6.2	5.2	7.2	0.4	7.2	4.0
Delaware:								
Wilmington	6.6	0.6	5.1	18.7	8.0	0.7	6.4	20.9
Florida:								
Jacksonville	7.9	0.4	0.7	14.7	7.0	0.2	0.5	13.6
Tampa	7.5	1.2	6.2	11.5	5.5	0.4	3.9	10.3
Georgia:								
Augusta	10.9	3.3	3.3	19.9	9.9	3.2	3.2	18.9
Macon	10.3	2.3	2.6	19.6	9.9	1.8	2.1	20.1
Savannah	14.6	0.9	1.6	26.5	12.8	0.6	1.4	23.9
Illinois:								
Aurora	2.0	0.3	1.9	8.8	2.5	0.3	2.4	11.0
Bloomington	1.2	0.4	0.9	8.8	1.3	0.6	1.1	7.7
Danville	2.4	1.3	1.7	13.5	2.7	1.6	1.9	12.2
Decatur	1.3	0.6	1.1	8.6	1.5	0.7	1.2	10.8
East St. Louis	5.5	0.7	4.5	14.6	7.1	0.6	6.1	14.9
Elgin	2.8	0.4	2.7	16.3	3.1	0.5	2.9	.....
Joliet	5.8	0.3	5.8	10.6	8.4	0.5	8.3	11.8
Peoria	1.3	0.4	1.1	7.2	1.2	0.4	1.0	7.3
Quincy	1.8	0.6	1.2	13.7	1.7	0.7	1.0	14.6
Rockford	2.0	0.1	2.0	5.1	2.4	0.1	2.4	.....
Springfield	4.7	0.9	4.1	13.9	5.6	1.1	5.0	13.1
Indiana:								
Evansville	3.4	1.4	1.8	18.7	3.9	1.4	1.7	21.9
Fort Wayne	2.2	1.6	2.1	7.0	2.0	1.3	2.0	5.6
South Bend	3.3	0.6	3.3	3.5	3.7	0.7	3.6	5.3
Terre Haute	1.7	1.0	1.4	6.9	1.8	1.0	1.5	7.2
Iowa:								
Cedar Rapids	1.4	0.4	1.4	6.5	1.6	0.6	1.6	.....
Clinton	1.8	0.4	1.7	8.9	2.2	0.4	2.1	7.7
Council Bluffs	2.8	0.5	2.2	12.4	4.7	0.7	3.5	15.0
Davenport	1.1	0.2	0.9	11.4	1.2	0.3	1.1	10.3
Des Moines	2.0	0.6	1.7	8.8	2.2	0.8	1.9	9.2
Dubuque	0.9	0.3	0.9	.....	0.8	0.3	0.8	.....
Sioux City	1.7	0.2	1.7	0.4	2.2	0.2	2.3	0.8
Waterloo	1.4	0.3	1.4	.....	1.9	0.4	1.8	.....
Kansas:								
Kansas City	3.9	0.5	3.1	10.0	4.6	0.6	3.9	9.4
Topeka	2.6	0.4	1.7	10.4	2.9	0.5	2.0	11.3
Wichita	1.5	0.5	1.2	7.3	2.1	0.7	1.8	8.4
Kentucky:								
Covington	2.5	0.9	1.3	20.7	2.8	1.2	1.5	22.6
Lexington	12.5	4.8	5.0	28.6	14.9	7.0	6.9	32.9
Newport	1.8	0.8	1.6	12.2	1.9	0.9	1.6	14.4
Louisiana:								
Shreveport	15.8	0.6	2.0	29.7	12.9	0.5	1.9	27.3
Maine:								
Lewiston	8.4	2.0	8.4	.....	11.0	2.4	10.9	.....
Portland	2.8	0.2	2.8	2.9	3.2	0.3	3.2	.....
Massachusetts:								
Brockton	2.6	0.2	2.6	3.8	3.0	0.3	3.0	4.0
Brookline town	1.0	0.1	1.0	0.5	1.0	0.2	1.0	.....
Chelsea	8.1	0.4	8.1	4.4	7.8	0.7	7.8	.....
Chicopee	7.0	0.6	7.0	.....	8.5	0.6	8.5	.....
Everett	1.6	0.2	1.6	2.7	1.9	0.2	1.8	4.4
Fitchburg	6.3	0.7	6.3	.....	7.6	0.9	7.6	.....

Per cent of illiteracy in cities having 25,000 to 100,000 population in the United States, 1910—Continued.

Cities.	In population 10 years of age and over.				Males 21 years of age and over.			
	All classes.	Native white.	Total white.	Negro.	All classes.	Native white.	Total white.	Negro.
Massachusetts—Continued.								
Haverhill	4.0	0.3	4.0	4.8	4.8	0.4	4.8	5.0
Holyoke	6.8	0.8	6.8	.....	8.4	1.3	8.4	.....
Lawrence	13.2	0.7	13.1	27.7	14.8	0.8	14.7	43.0
Lynn	3.0	0.2	3.0	6.2	3.4	0.3	3.4	6.9
Malden	2.2	0.1	2.1	7.9	1.8	0.1	1.7	7.6
New Bedford	12.1	1.1	11.8	23.7	14.5	1.5	14.2	23.2
Newton	3.7	0.1	3.7	8.9	5.3	0.1	5.2	10.0
Pittsfield	3.6	0.4	3.6	3.1	4.4	0.3	4.4	3.9
Quincy	2.4	0.3	2.4	.....	2.9	0.3	2.1	.....
Salem	6.0	0.5	5.9	2.8	8.0	0.5	8.0	.....
Somerville	1.9	0.1	1.9	6.6	2.4	0.2	2.3	.....
Springfield	4.5	0.5	4.4	4.6	5.2	0.5	5.2	5.3
Taunton	9.4	1.1	9.2	33.3	12.4	1.3	12.1	.....
Waltham	3.3	1.4	2.4	.....	3.5	1.3	3.5	.....
Michigan:								
Battle Creek	0.6	0.3	0.6	4.1	0.9	0.2	0.7	6.1
Bay City	3.6	1.3	3.6	3.7	4.5	1.9	4.5	.....
Flint	1.2	0.3	1.2	0.9	1.6	0.3	1.6	.....
Jackson	2.1	0.3	2.0	8.7	3.0	0.4	2.8	9.0
Kalamazoo	1.8	0.7	1.7	5.0	2.1	1.1	2.1	2.4
Lansing	1.5	0.3	1.5	7.0	1.9	0.4	1.9	4.4
Saginaw	3.1	0.6	3.0	5.7	3.6	0.9	3.6	6.3
Minnesota:								
Duluth	2.7	0.3	2.7	0.8	3.2	0.4	3.2	1.0
Missouri:								
Joplin	1.7	1.4	1.4	11.7	1.6	1.4	1.4	9.2
St. Joseph	2.4	0.9	1.7	12.9	2.8	1.1	2.1	13.8
Springfield	2.4	1.6	1.6	14.9	2.5	1.7	1.7	16.6
Montana:								
Butte	1.7	0.2	1.6	4.5	1.7	0.2	1.5	2.6
Nebraska:								
Lincoln	3.6	0.3	3.6	5.6	3.3	0.3	3.3	4.0
South Omaha	5.3	0.3	5.3	7.6	7.3	0.3	7.3	8.6
New Hampshire:								
Manchester	5.9	0.8	5.9	.....	7.3	0.9	7.3	.....
Nashua	6.8	0.7	6.8	.....	8.0	0.9	8.0	.....
New Jersey:								
Atlantic City	4.5	0.6	3.6	7.6	4.8	0.7	4.2	6.3
Bayonne	9.1	0.4	9.1	7.8	11.3	0.4	11.3	7.8
Camden	4.4	0.6	3.7	14.0	5.1	0.7	4.4	15.0
East Orange	1.3	0.2	0.9	7.4	1.1	0.2	0.8	7.1
Elizabeth	6.9	0.5	6.8	8.4	8.6	0.6	8.5	9.8
Hoboken	4.5	0.4	4.7	0.9	5.0	0.3	5.0	.....
Orange	6.6	0.5	6.5	7.6	7.7	0.4	7.9	7.1
Passaic	15.8	0.7	15.9	11.9	15.0	0.8	15.0	12.8
Perth Amboy	9.9	0.5	9.9	7.0	11.6	0.5	11.6	.....
Trenton	5.9	1.0	5.8	10.7	7.0	1.3	6.8	11.7
West Hoboken town	2.4	0.2	2.4	.....	2.2	0.2	2.1	.....
New York:								
Amsterdam	10.3	0.4	10.3	.....	12.3	0.5	12.3	.....
Auburn	4.5	0.3	4.5	2.9	5.1	0.4	5.2	4.2
Binghamton	2.8	0.4	2.8	3.7	2.8	0.7	2.8	2.9
Elmira	2.5	0.3	2.4	9.5	2.9	0.4	2.7	14.2
Jamestown	2.6	0.2	2.6	.....	3.2	0.3	3.2	.....
Kingston	4.3	0.8	4.2	9.0	5.3	1.1	5.2	10.7
Mount Vernon	4.1	0.1	4.0	6.1	4.9	0.2	4.9	5.1
New Rochelle	6.5	0.2	6.3	9.3	7.9	0.3	7.8	9.2
Newburgh	3.0	0.3	2.9	3.6	3.5	0.3	3.5	3.2
Niagara Falls	5.8	0.2	5.7	10.5	8.0	0.2	7.9	9.3
Poughkeepsie	2.8	0.5	2.8	3.2	3.0	0.4	3.1	1.4
Schenectady	5.4	0.4	5.4	3.3	6.7	0.3	6.7	.....
Troy	2.0	0.4	1.9	4.5	2.1	0.4	2.1	3.1
Utica	8.2	0.5	8.2	7.5	9.5	0.6	9.5	7.4
Watertown	4.6	1.0	4.6	.....	6.9	1.3	6.9	.....
Yonkers	8.4	0.3	8.4	7.0	10.6	0.4	10.6	7.4
North Carolina:								
Charlotte	10.1	2.3	2.3	24.4	9.4	1.8	1.8	26.2
Wilmington	14.9	3.0	3.1	28.2	13.1	2.5	2.7	27.0
Ohio:								
Akron	3.0	0.4	2.9	8.9	3.9	0.3	3.8	11.8
Canton	3.4	0.4	3.4	2.0	5.1	0.3	5.1	2.3
Hamilton	1.3	0.7	1.1	10.2	1.7	0.9	1.4	9.8
Lima	1.5	0.9	1.3	5.6	2.0	1.3	1.8	7.0
Lorain	5.6	0.2	5.6	2.3	7.0	0.2	7.0	3.3
Newark	1.3	0.5	1.2	7.1	1.6	0.5	1.5	7.7

Per cent of illiteracy in cities having 25,000 to 100,000 population in the United States, 1910—Continued.

Cities.	In population 10 years of age and over.				Males 21 years of age and over.			
	All classes.	Native white.	Total white.	Negro.	All classes.	Native white.	Total white.	Negro.
Ohio—Continued.								
Springfield	2.1	0.5	1.4	8.5	2.6	0.6	1.7	9.6
Youngstown	7.1	0.4	7.2	5.8	9.0	0.3	9.1	6.6
Zanesville	2.2	0.9	1.8	8.7	2.7	1.1	2.3	10.8
Oklahoma:								
Muskogee	4.2	0.6	0.7	12.1	3.9	0.4	0.5	12.6
Oklahoma City	1.4	0.3	0.8	6.7	1.5	0.2	1.0	6.2
Pennsylvania:								
Allentown	3.0	0.9	3.0	2.6	2.5	0.6	2.5	.....
Altoona	3.1	0.8	3.1	3.8	3.9	0.6	3.9	2.4
Chester	6.6	0.7	5.6	13.8	9.1	0.7	8.2	14.9
Easton	2.6	0.8	1.8	3.8	2.4	0.5	2.4	.....
Erie	3.7	0.4	3.7	6.0	5.2	0.7	5.2	8.2
Harrisburg	2.5	0.9	1.8	11.5	2.9	0.9	2.1	12.8
Hazleton	10.0	1.6	10.0	.....	11.3	1.4	11.3	.....
Johnstown	9.0	1.0	9.0	5.0	13.3	1.4	13.4	3.8
Lancaster	1.7	1.0	1.5	13.1	2.0	1.2	1.8	13.5
McKeesport	4.1	0.4	4.0	6.7	4.9	0.6	4.8	7.3
New Castle	6.4	0.5	6.3	10.8	8.9	0.6	8.7	14.8
Norristown borough	8.8	4.0	8.5	15.8	9.7	4.4	9.3	19.9
Reading	3.0	1.1	3.0	3.4	3.7	1.0	3.7	3.7
Shenandoah borough	23.7	2.5	23.7	.....	28.6	3.7	28.6	.....
Wilkes-Barre	6.9	0.8	6.9	8.1	8.6	1.0	8.6	7.7
Williamsport	1.4	0.6	1.2	7.0	1.8	0.7	1.6	7.3
York	2.7	2.1	2.5	11.6	3.0	2.2	2.8	11.5
Rhode Island:								
Newport	2.9	0.3	2.6	5.8	3.5	0.3	3.3	6.7
Pawtucket	5.4	1.1	5.4	5.8	5.6	1.2	5.5	.....
Warwick town	10.6	2.8	10.6	9.0	12.6	3.2	12.6	.....
Woonsocket	9.1	2.3	9.1	.....	11.9	3.3	11.9	.....
South Carolina:								
Charleston	15.3	0.9	1.5	27.9	14.0	0.9	1.7	26.8
Columbia	17.4	5.5	5.6	32.2	16.2	5.2	5.3	32.3
Tennessee:								
Chattanooga	9.9	2.3	2.5	20.7	10.1	2.1	2.2	21.9
Knoxville	6.5	4.3	4.3	14.2	6.0	3.4	3.4	15.2
Texas:								
Austin	7.8	2.6	4.2	18.8	8.7	3.6	5.0	21.3
Dallas	4.0	0.6	1.1	15.4	3.8	0.5	1.1	15.1
El Paso	13.3	3.1	13.4	9.5	11.4	2.3	11.5	8.8
Fort Worth	3.8	0.7	2.0	12.0	4.4	0.6	2.7	12.0
Galveston	5.1	0.9	2.8	12.2	5.5	0.9	3.5	12.0
Houston	6.4	0.7	1.9	16.4	5.9	0.6	1.8	16.4
San Antonio	10.1	4.3	9.7	13.2	9.4	3.6	8.9	13.0
Waco	5.1	0.6	1.4	16.8	5.2	0.4	1.2	18.5
Utah:								
Ogden	1.5	0.3	1.3	2.7	1.9	0.3	1.6	0.9
Salt Lake City	1.6	0.2	1.3	4.6	2.0	0.3	1.5	4.3
Virginia:								
Lynchburg	9.3	1.1	1.4	25.3	9.3	1.2	1.8	28.2
Norfolk	9.0	1.2	2.3	19.7	8.6	1.1	2.5	18.6
Portsmouth	9.8	1.0	1.7	24.5	8.5	1.0	1.6	23.1
Roanoke	6.9	2.0	2.2	22.7	7.2	2.3	2.4	25.8
Washington:								
Tacoma	1.8	0.1	1.7	3.6	2.1	0.2	1.9	3.1
West Virginia:								
Huntington	5.1	4.5	4.5	13.3	5.6	4.7	4.7	14.8
Wheeling	3.2	0.9	3.0	9.0	4.0	1.3	3.8	8.0
Wisconsin:								
Green Bay	5.7	2.8	5.7	.....	7.6	4.3	7.6	.....
La Crosse	2.5	0.3	3.0	.....	2.9	0.4	2.9	.....
Madison	1.6	0.1	1.5	5.2	2.2	0.1	2.0	.....
Oshkosh	2.7	0.3	2.7	.....	3.4	0.4	3.4	.....
Racine	3.6	0.2	3.6	3.9	4.7	0.1	4.7	.....
Sheboygan	3.2	0.3	3.2	.....	3.9	0.2	3.9	.....
Superior	2.7	0.2	2.6	1.2	3.1	0.2	3.1	.....

Number of illiterates per thousand in the total population 10 years of age and over in 1910.

Number of illiterates per thousand of the total white population 10 years of age and over in 1910.

1. Washington—14.
2. South Dakota—14.
3. Idaho—14.
4. Oregon—15.
5. District of Columbia—15.
6. Iowa—16.
7. Utah—17.
8. Kansas—18.
9. Nebraska—18.
10. Nevada—24.
11. Wyoming—25.
12. North Dakota—26.
13. Indiana—28.
14. Minnesota—29.
15. Ohio—30.
16. California—30.
17. Wisconsin—30.
18. Michigan—32.
19. Montana—32.
20. Colorado—35.
21. Illinois—36.
22. Missouri—36.
23. Oklahoma—36.
24. Maryland—37.
25. Vermont—37.
26. Maine—40.
27. New Hampshire—46.
28. Delaware—50.
29. Massachusetts—51.
30. Mississippi—53.
31. New Jersey—54.
32. New York—55.
33. Florida—55.
34. Pennsylvania—58.
35. Connecticut—59.
36. Texas—67.
37. Arkansas—70.
38. West Virginia—76.
39. Rhode Island—77.
40. Georgia—78.
41. Virginia—81.
42. Tennessee—97.
43. Kentucky—99.
44. Alabama—99.
45. South Carolina—103.
46. North Carolina—123.
47. Arizona—131.
48. Louisiana—142.
49. New Mexico—164.

Number of illiterates per thousand of the native-born white population 10 years of age and over in 1910.

1. Washington—3.
2. Idaho—3.
3. Wyoming—3.
4. Oregon—4.
5. South Dakota—4.
6. Utah—4.
7. Montana—4.
8. Nevada—4.
9. Massachusetts—5.
10. California—5.
11. Minnesota—5.
12. North Dakota, 5.
13. District of Columbia—5.
14. Nebraska—6.
15. Connecticut—6.
16. New York—8.
17. Iowa—8.
18. Kansas—8.
19. Wisconsin—9.
20. New Jersey—9.
21. Michigan—11.
22. New Hampshire—11.
23. Pennsylvania—13.
24. Illinois—13.
25. Rhode Island—13.
26. Ohio—15.
27. Colorado—16.
28. Vermont—19.
29. Maine—20.
30. Indiana—21.
31. Maryland—26.
32. Missouri—29.
33. Delaware—29.
34. Oklahoma—33.
35. Arizona—42.
36. Texas—43.
37. Florida—50.
38. Mississippi—52.
39. West Virginia—64.
40. Arkansas—70.
41. Georgia—78.
42. Virginia—80.
43. Tennessee—97.
44. Alabama—99.
45. Kentucky—100.
46. South Carolina—103.
47. North Carolina—123.
48. Louisiana—134.
49. New Mexico—149.

Number of illiterates per thousand of the negro population 10 years of age and over in 1910.

1. Minnesota—34.
2. Oregon—34.
3. Washington—43.
4. Wisconsin—45.
5. Vermont—48.
6. Utah—48.
7. North Dakota—48.
8. New York—50.
9. Wyoming—50.
10. South Dakota—55.
11. Nevada—55.
12. Michigan—57.
13. Connecticut—63.
14. Idaho—64.
15. Montana—70.
16. California—71.
17. Nebraska—72.
18. Arizona—72.
19. Maine—80.
20. Massachusetts—81.
21. Colorado—86.
22. Pennsylvania—91.
23. Rhode Island—95.
24. New Jersey—99.
25. Iowa—103.
26. Illinois—105.
27. New Hampshire—106.
28. Ohio—111.
29. Kansas—120.
30. District of Columbia—135.
31. Indiana—137.
32. New Mexico—142.
33. Missouri—174.
34. Oklahoma—177.
35. West Virginia—203.
36. Maryland—234.
37. Texas—246.
38. Florida—255.
39. Delaware—256.
40. Arkansas—264.
41. Tennessee—273.
42. Kentucky—276.
43. Virginia—300.
44. North Carolina—319.
45. Mississippi—356.
46. Georgia—365.
47. South Carolina—387.
48. Alabama—401.
49. Louisiana—484.

Number of illiterates per thousand of the total male population 21 years of age and over in 1910.

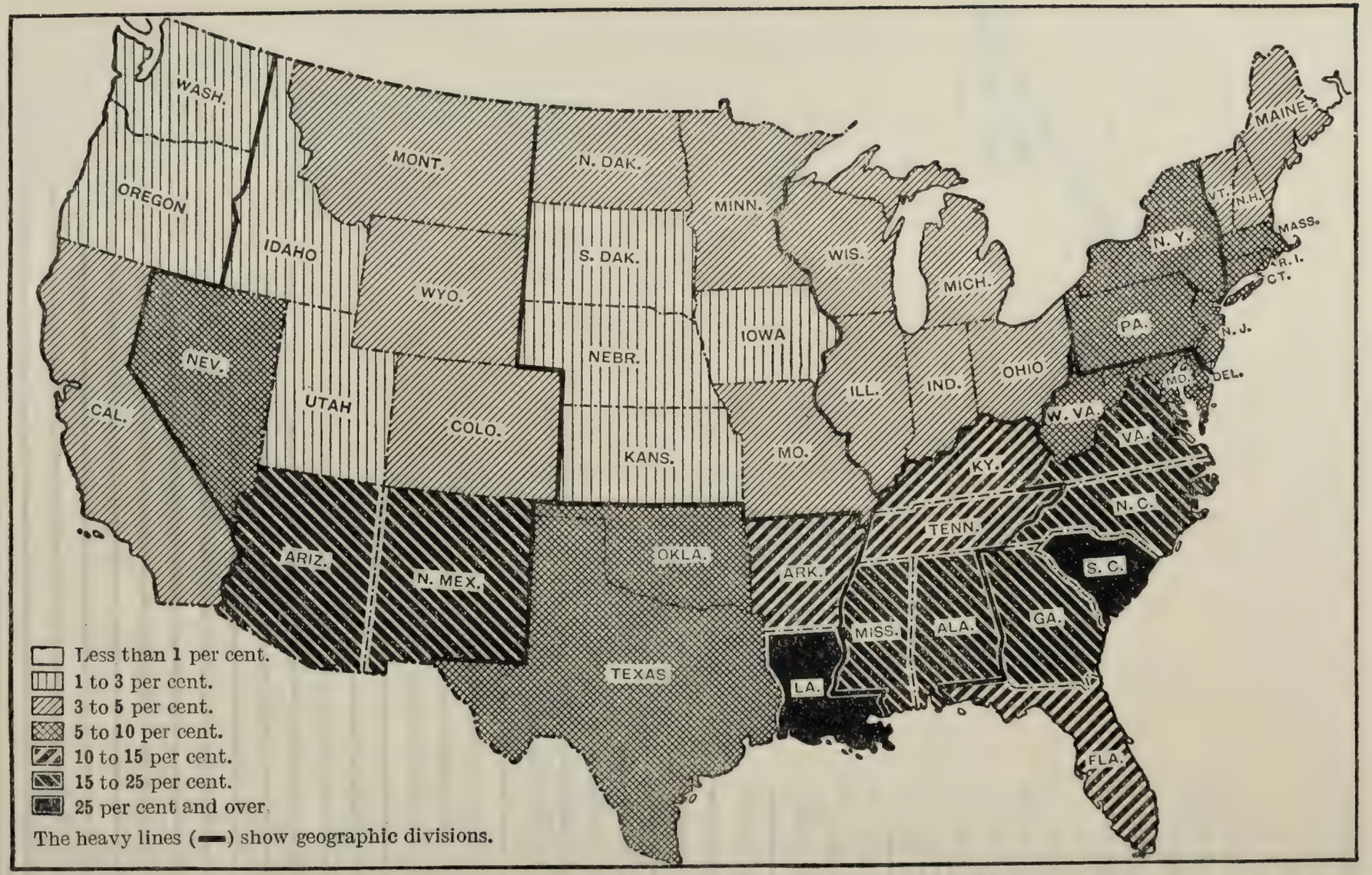
1. Iowa—21.
2. Washington—24.
3. Nebraska—24.
4. Oregon—25.
5. Kansas—29.
6. South Dakota—31.
7. North Dakota—31.
8. Idaho—31.
9. Utah—33.
10. Minnesota—37.
11. Wisconsin—40.
12. Indiana—41.
13. Wyoming—41.
14. Ohio—42.
15. Colorado—42.
16. Michigan—44.
17. Illinois—46.
18. California—46.
19. District of Columbia—49.
20. Missouri—53.
21. Vermont—53.
22. Maine—55.
23. Montana—57.
24. New York—60.
25. Nevada—60.
26. Massachusetts—61.
27. New Hampshire—62.
28. Oklahoma—64.
29. New Jersey—66.
30. Connecticut—68.
31. Pennsylvania—78.
32. Maryland—85.
33. Rhode Island—88.
34. Delaware—101.
35. West Virginia—104.
36. Texas—109.
37. Arkansas—135.
38. Florida—140.
39. Kentucky—145.
40. Tennessee—157.
41. New Mexico—176.
42. Virginia—177.
43. Arizona—195.
44. North Carolina—213.
45. Georgia—228.
46. Alabama—243.
47. Mississippi—253.
48. South Carolina—271.
49. Louisiana—286.

Number of illiterates per thousand of the total white male population 21 years of age and over in 1910.

Number of illiterates per thousand of the native-born white male population 21 years of age and over in 1910.

Number of illiterates per thousand of the negro male population 21 years of age and over in 1910.

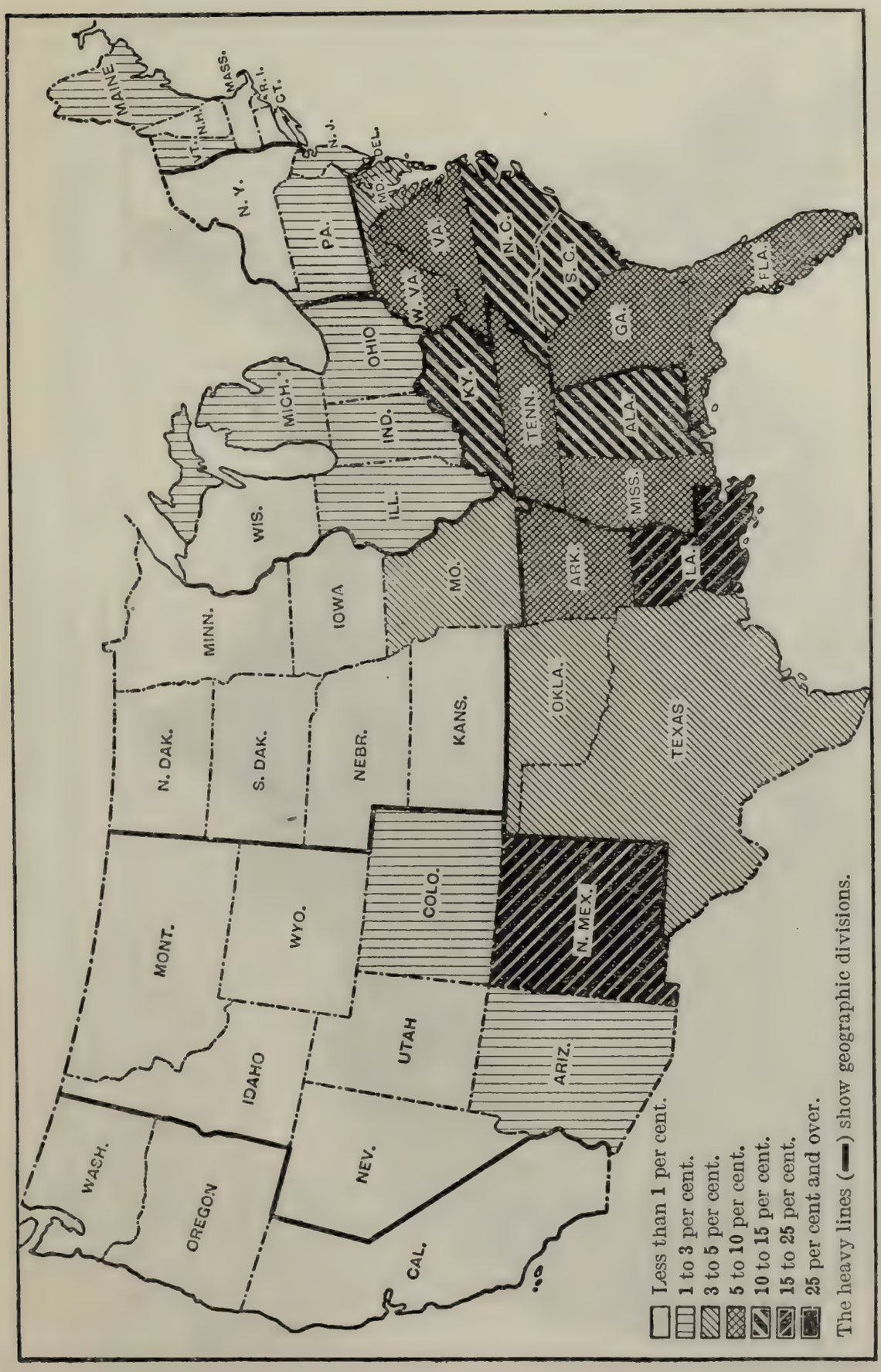
1. Oregon—31.
2. Minnesota—36.
3. Wyoming—38.
4. Washington—39.
5. Vermont—39.
6. Utah—46.
7. Idaho—49.
8. New York—50.
9. North Dakota—51.
10. Wisconsin—54.
11. Michigan—63.
12. Connecticut—66.
13. Nevada—66.
14. California—68.
15. South Dakota—70.
16. Nebraska—72.
17. Arizona—84.
18. Colorado—87.
19. Montana—88.
20. Massachusetts—94.
21. Pennsylvania—101.
22. New Jersey—107.
23. Illinois—109.
24. Rhode Island—112.
25. Iowa—115.
26. Maine—116.
27. Ohio—132.
28. Kansas—135.
29. New Mexico—137.
30. District of Columbia—138.
31. New Hampshire—145.
32. Indiana—160.
33. Missouri—190.
34. Oklahoma—201.
35. West Virginia—240.
36. Florida—259.
37. Maryland—273.
38. Arkansas—287.
39. Texas—299.
40. Delaware—313.
41. Tennessee—321.
42. Kentucky—343.
43. Virginia—363.
44. North Carolina—386.
45. Mississippi—410.
46. Georgia—416.
47. South Carolina—431.
48. Alabama—434.
49. Louisiana—483.



TOTAL POPULATION.

PERCENTAGE OF ILLITERATES IN THE POPULATION 10 YEARS OF AGE AND OVER, 1910.

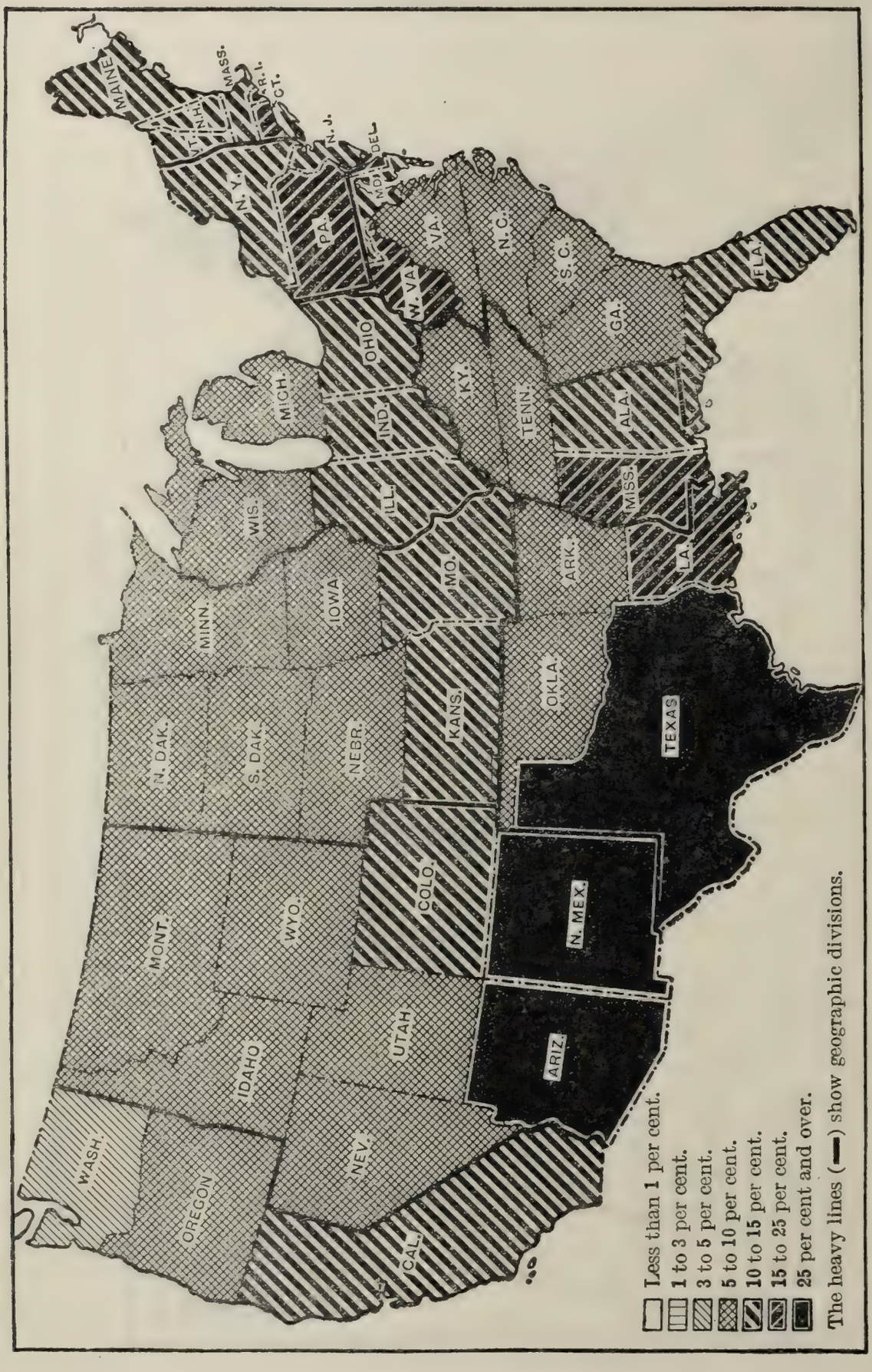
(From the Abstract of the Census, 1910, page 246.)



NATIVE WHITES OF NATIVE PARENTAGE.

PERCENTAGE OF ILLITERATES IN THE POPULATION 10 YEARS OF AGE AND OVER, 1910.

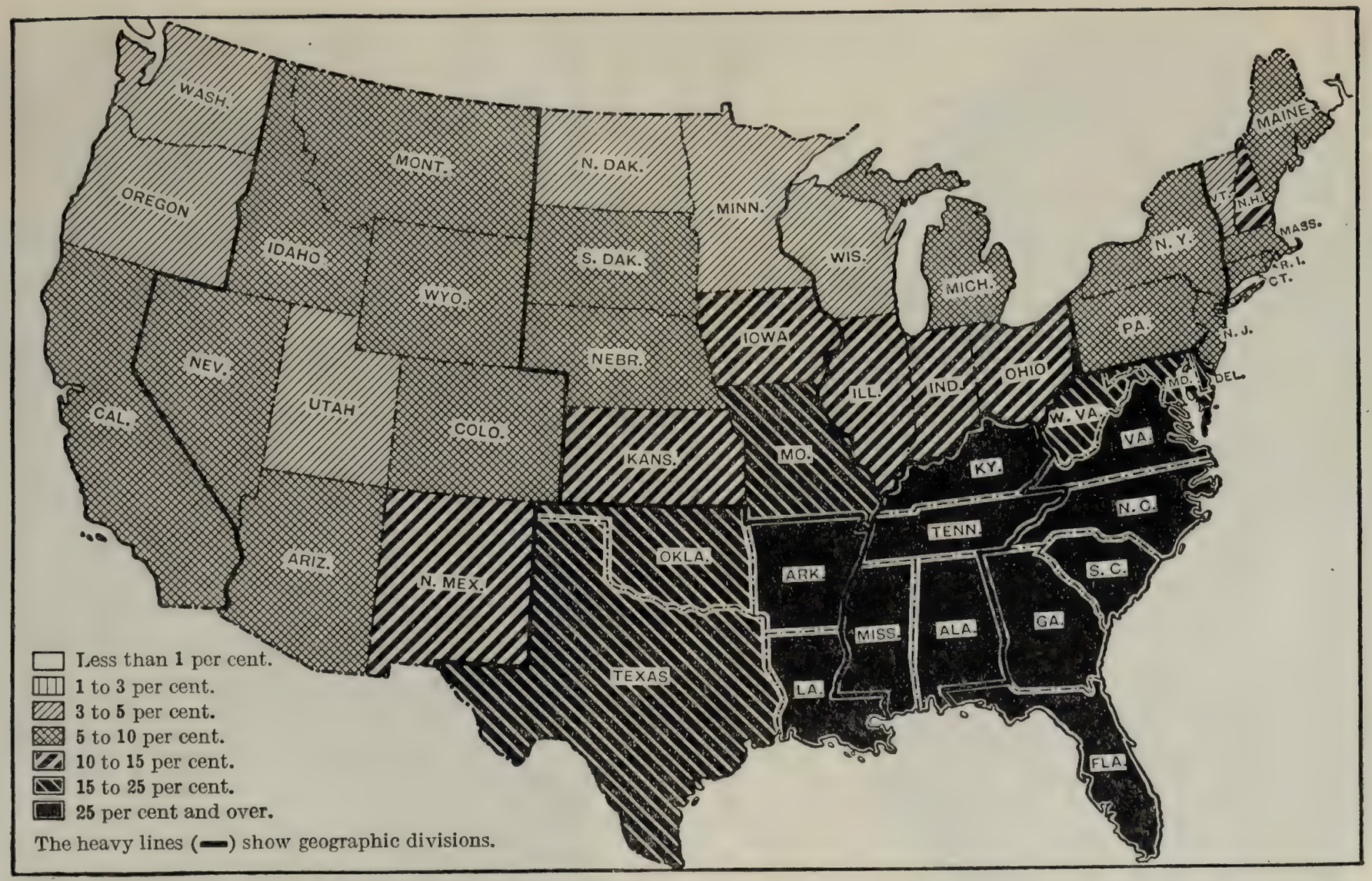
(From the Abstract of the Census, 1910, page 246.)



FOREIGN-BORN WHITES.

PERCENTAGE OF ILLITERATES IN THE POPULATION 10 YEARS OF AGE AND OVER, 1910.

(From the Abstract of the Census, 1910, page 247.)



NEGROES.

PERCENTAGE OF ILLITERATES IN THE POPULATION 10 YEARS OF AGE AND OVER, 1910.

(From the Abstract of the Census, 1910, page 247.)

To wait for a generation of illiterate men, women, and children to die is a slow and painful process. That there is a shorter way to the reduction and elimination of illiteracy has been proven by some European States, and sporadic efforts in this country indicate that there is a better way here, to wit: To teach these grown-ups, in schools organized especially for them, to read and write, and possibly something more.

One of the most notable recent attempts to do this is that begun in September, 1911, by Mrs. Cora Wilson Stewart, superintendent of schools in Rowan County, Ky., and her associates.

Having studied carefully the conditions of the county, Mrs. Stewart decided to open night schools for adults on moonlight nights in the public schoolhouses of the county. She outlined her plan to the teachers and called for volunteers. All the teachers of the county responded. On Labor Day, September 4, 1911, these teachers visited the homes of the people throughout the county, explained the plan, and announced that moonlight schools would be opened the next evening. It was expected that the response would be slow, but more than 1,200 men and women from 18 to 86 years old were enrolled the first evening. They came trooping over the hills and out of the hollows, some to add to the meager education received in the inadequate schools of their childhood, some to receive their first lessons in reading and writing. Among these were not only illiterate farmers and their illiterate wives, sons, and daughters, but also illiterate merchants or "storekeepers," illiterate ministers, and illiterate lumbermen. Mothers, bent with age, came that they might learn to read letters from absent sons and daughters, and that they might learn for the first time to write to them.

Almost one-third of the population of the county was enrolled. Says Mrs. Stewart:

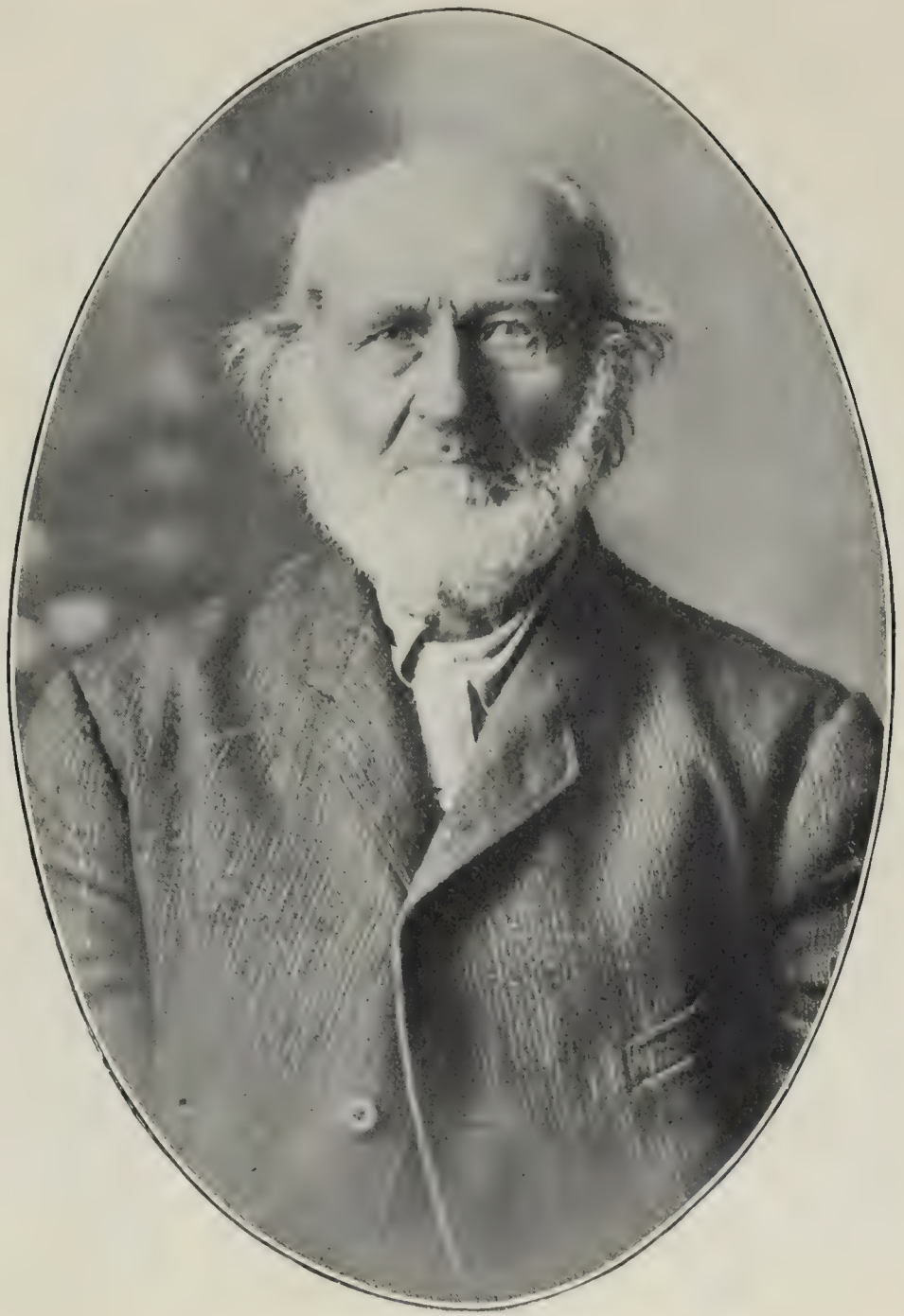
> They had all the excuses and all the barriers which any people might offer—high hills, bridgeless streams, rugged roads, weariness from the day's hard toil, the shame of beginning study late in life, and all the others; but they were not seeking excuses—they were sincerely and earnestly seeking knowledge. Their interests, their zeal, and their enthusiasm were wonderful to witness. It was truly an inspiring sight to see these aged pupils bending over the desks which their children and grandchildren had occupied during the day. Their delight in learning and their pride in their achievements exceeded any joy that I have ever witnessed.

In some instances, where shyness prevented some of the adults from attending at first, lessons were given in their homes until they could read and write a little. They were then willing and eager to enroll in the night schools.

In September, 1912, a "moonlight school" teachers' institute was held in Morehead, Ky.; and the superintendent and teachers who had

A. ELIZABETH PRINCE, 70 YEARS OF AGE.

She learned in eight weeks to write her first letter.



B. UNCLE MARTIN SLOAN; AGE, 87.

The oldest pupil in the moonlignt schools of Rowan County.

A. A LESSON IN READING WITH A NEWSPAPER AS THE TEXT.

B. FOUR GENERATIONS REPRESENTED IN THE SAME SCHOOLROOM.

conducted the first moonlight schools instructed others who wished to do work of this kind in Rowan and adjoining counties, and in the fall of 1912 the movement spread to 8 or 10 other counties, while the enrollment of adults in Rowan County reached nearly 1,600.

The success of the men and women proves that it is not so difficult for illiterate grown-ups to learn to read and write as is generally supposed. They learn in a very short time, if given the opportunity. Reading, writing, and arithmetic are simple subjects when mature minds are concentrated upon them. A child of ordinary mind can be taught to read and write in three or four weeks; and the adult can do at least as well. One man, aged 30, after four lessons in the evening school, wrote the county superintendent a legible letter. Another man, aged 50, wrote a legible letter after 7 nights' attendance. A woman, aged 70, wrote a legible letter after 8 nights of study. These cases are, of course, exceptional; but experience has shown that a few weeks' attendance at the night schools has been sufficient to enable the adult pupils to pass over the dark line of illiteracy and to get into the class of literates. Several succeeded in securing a Bible, which had been offered as a prize by the superintendent to those who would learn to write a letter during the first two weeks of the moonlight school term.

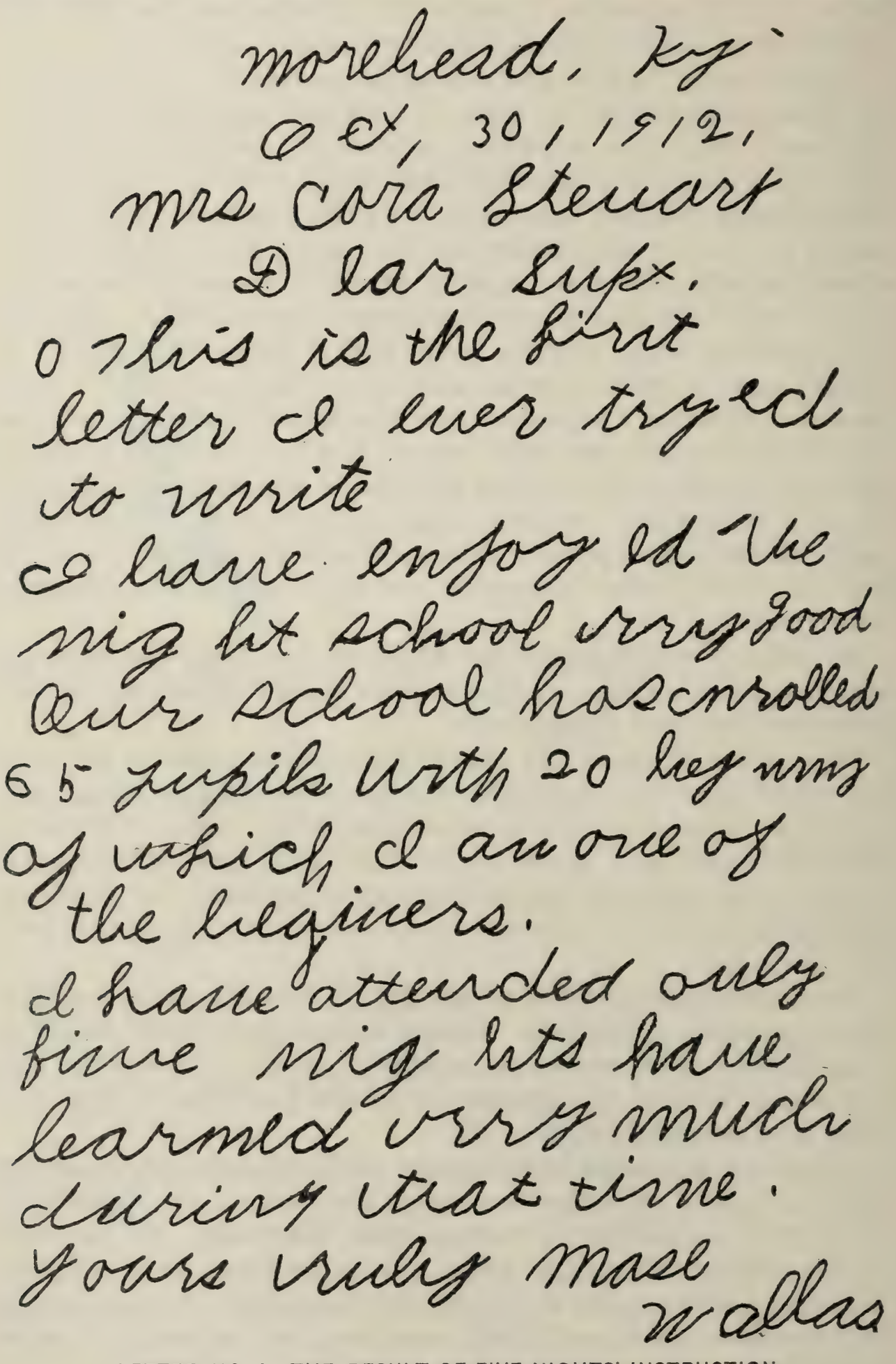
In some of the districts the enrollment of adults exceeded the enrollment of children. In two districts the enrollment ran as high as 70, and in several as high as 65.

One teacher, 18 years old, had only four adult pupils in her class, but one of these was a preacher who learned to read his Bible and a newspaper after a few weeks of earnest study. After 4 lessons he signed his name to a paper for the first time; and after 7 lessons, to quote the words of the county superintendent, "he wrote an enthusiastic letter, with a period at the close of each sentence as large as a bird's eye."

In another night school, of 65 enrolled, 23 were illiterates, and there were 3 preachers in the class. Several octogenarians were enrolled in these schools; one a woman 85, another a man 87. Some of the men and women entered the schoolroom for the first time in their lives when they enrolled as night pupils.

One of the significant facts brought out in this experiment is that adults of limited education have taken advantage of the opportunity to return to school and to increase their knowledge. Of the 1,600 adult pupils attending night school during the second term, 300 were unable to read and write at all, 300 were from those who had learned in September, 1911, and 1,000 were men and women of meager education.

In a number of instances adults from the night schools have enrolled as pupils in the day schools; and the superintendent states

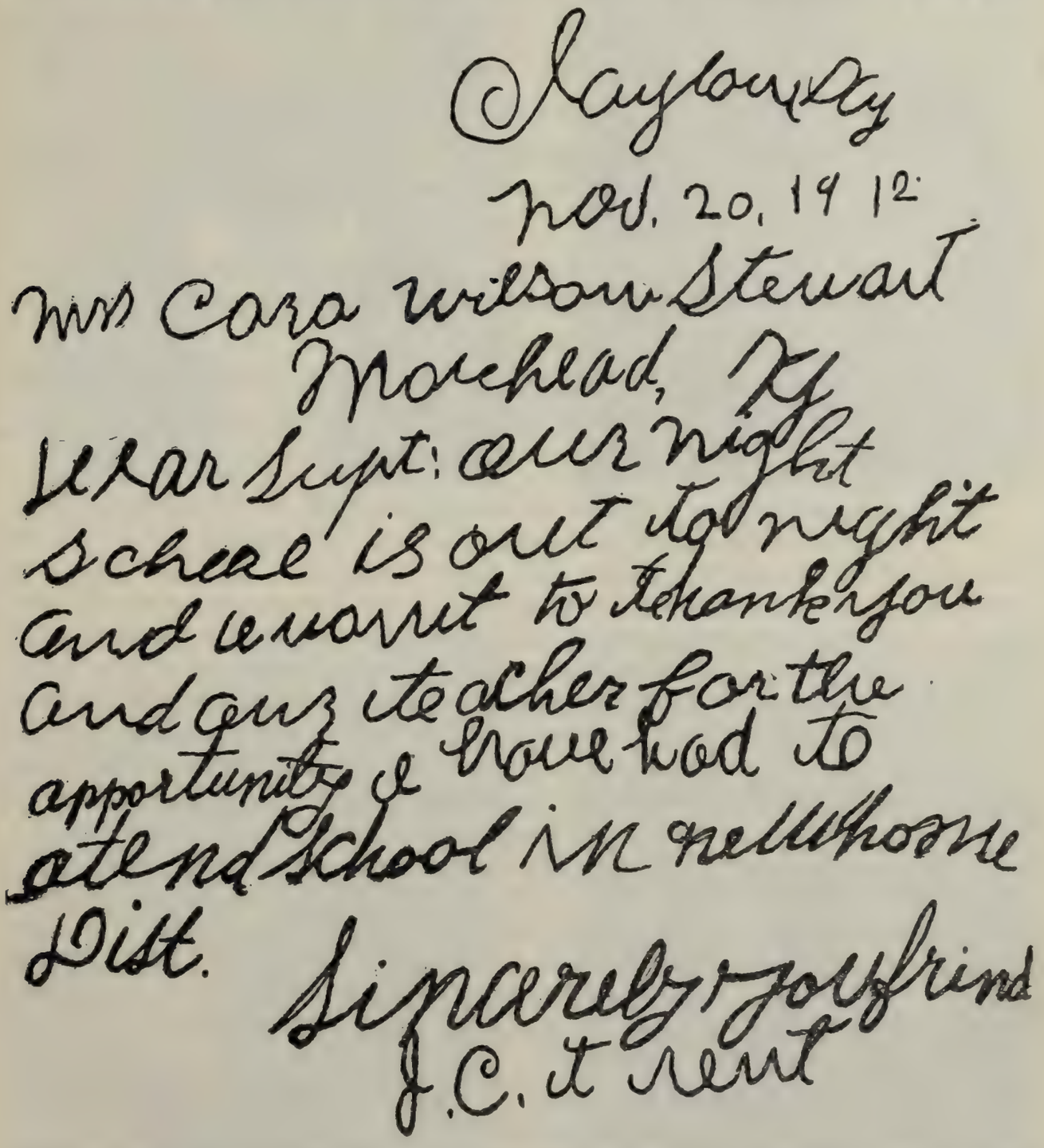

morehead. ky
oct, 30, 1912.
mrs cora Stewart
Dear Supt.
o this is the first
letter i ever tryed
to write
i have enjoyed the
nig ht school very good
our school has enrolled
65 pupils with 20 beginners
of which i am one of
the beginners.
i have attended only
five nig hts have
learned very much
during that time.
Yours truly Mose
Wallas

LETTER NO. 1. THE RESULT OF FIVE NIGHTS' INSTRUCTION.
The writer, Moses Wallace, is 32 years old.

that the presence of a determined man or woman in the school has proven an inspiration to.pupils and teacher.

The change in the attitude of the community toward the school, where the night school has been undertaken, is in itself significant. A school trustee thus describes the change in his community:

I have lived in this district for 55 years and I never saw any such interest as we have here now. The school used to just drag along, and nobody seemed interested. We never had a gathering at the school, and nobody thought of visiting the school. We had not had night school but three weeks until we got together right. We papered


Saylorsburg
Nov. 20, 1912
Mrs Cora Wilson Stewart
Morehead, Ky
Dear Supt: our night
school is out tonight
and I want to thank you
and our teacher for the
opportunity I have had to
attend School in nellhouse
Dist. Sincerely your friend
J. C. T Kent

LETTER NO. 2. THE WRITER'S FIRST LETTER. HE IS THE FATHER OF SEVEN SONS.

the house, put in new windows, purchased new stovepipe, made new steps, contributed money, and bought the winter's fuel.

Now we have a live Sunday school, a singing school, prayer meeting once each week, and preaching twice a month. People of all denominations in the district meet and worship together in perfect unity and harmony, aged people come regularly, and even people from the adjoining county are beginning to come over to our little schoolhouse.

The remark of one old woman of 70 probably voices the feelings and sentiments of all the adults who have learned to read and write in

these night schools. When asked what benefit the moonlight school had been to her, she said, "Oh, to be able to read my Bible and to write to my children and grandchildren! I would not take anything for the privilege."

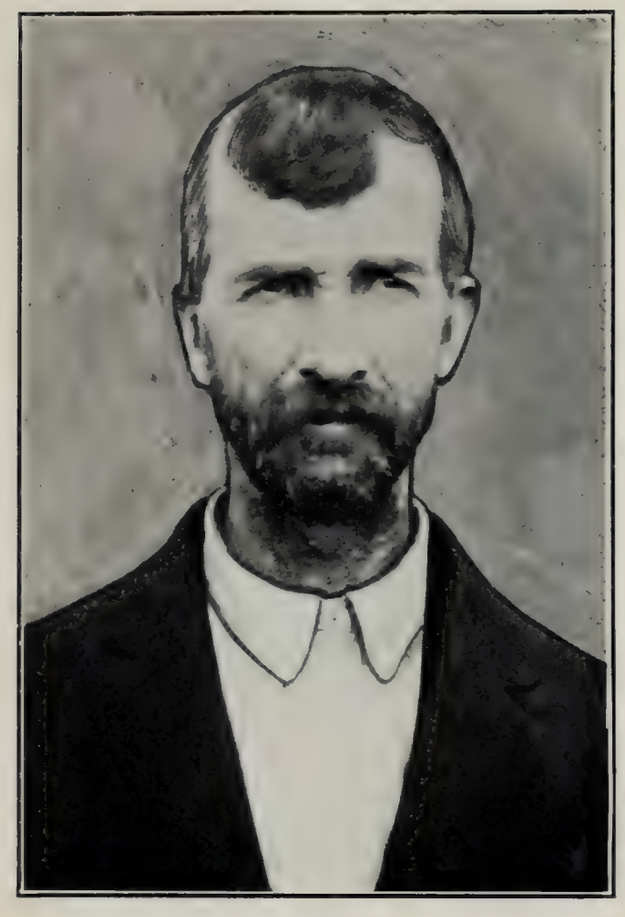
The studies pursued in these moonlight schools are reading, writing, arithmetic, and spelling. Brief drills are given in the essential facts of language, history, geography, civics, sanitation, agriculture, and horticulture. The reading text is the Rowan County School Messenger, edited by the county superintendent, published weekly for the special benefit of the adult students, and furnished free of charge. This paper deals largely with school and county affairs, and the news is made up in short sentences designed to help the pupils in their efforts to read.

This experiment in Rowan County, Ky., shows that it is possible to bring help to illiterate men and women even under the most difficult and adverse circumstances.

The following extracts from an article in the Louisville Courier-Journal of December 29, 1912, show the spirit of this work so well that they are included here:

The teachers gladly gave volunteer service and received no compensation whatever. A few prizes were offered to stimulate teachers and trustees and were to be awarded on the highest enrollment, the largest attendance, and the number of illiterates taught, but teachers and trustees announced that any prizes won by them would be donated to the district for libraries and other needed improvements. The teachers are in the main natives of Rowan County, young in years and in experience, deeply in sympathy with the people and their needs, consecrated to the cause of education, and determined to wipe out illiteracy from the county and to make of each and every citizen, high or low, an intelligent, active, happy factor in the school. They possess a high degree of intelligence, an average amount of scholarship, and the mission spirit, the most essential qualification of a teacher, in the highest degree.

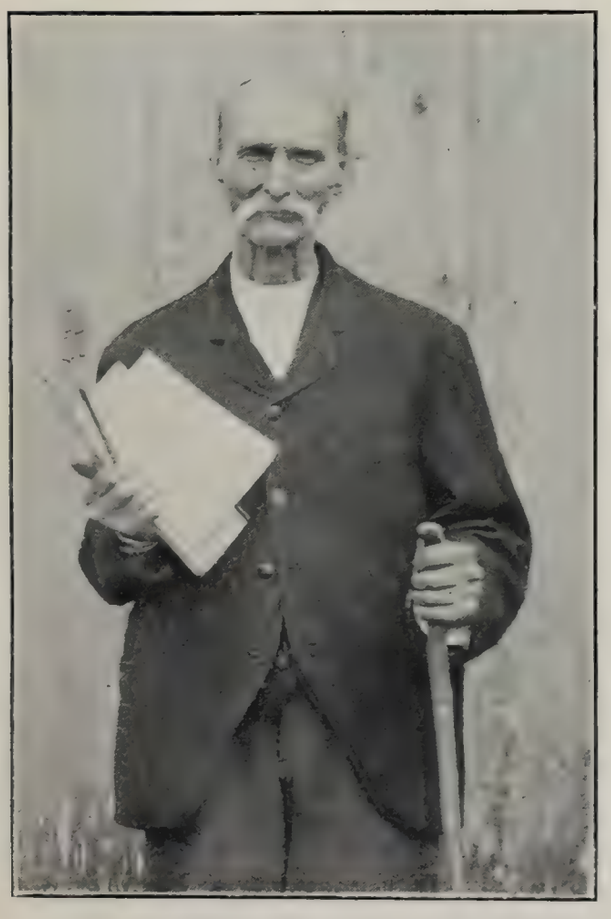
If obstacles presented themselves, the teachers promptly removed them; and if excuses were made, they met them with argument and persuasion and overcame them. Several married teachers who lived at home and rode on horseback to school each day left their homes when the night-school term began and took up their abode in the district. Teachers who lived or boarded long distances from the schoolhouses remained at school from the time the day school began at 8 o'clock in the morning until the night school ended at 9 o'clock in the evening, making a 13-hour day. Some canvassed their districts regularly during the few hours which intervened between the close of the day school and the beginning of the night school and started many who were too diffident to come to school to writing at home, and after they were slightly advanced persuaded them into the school. One widow, who not only taught, but was burdened with household cares, walked back and forth 3 miles with her two children twice each day to the schoolhouse to instruct the pupils in both the day and night school sessions. School was conducted for two hours each evening on four nights during the week, Monday, Tuesday, Wednesday, and Thursday evenings, leaving the teachers three nights for complete rest and relaxation to refresh them for the work of the next week. None showed any particular evidence of strain or fatigue or overwork, and each and every one declared the work a most delightful and fascinating one and one which even greatly increased the interest and added to the success of the day school.



A. MARTIN DE HART, A PRIZE WINNER.

B. SCHOOLMATES.

The man is 72; the woman, 68.



C. UNCLE RANS BURTON; AGE, 76.

D. MRS. A. J. WHITE.

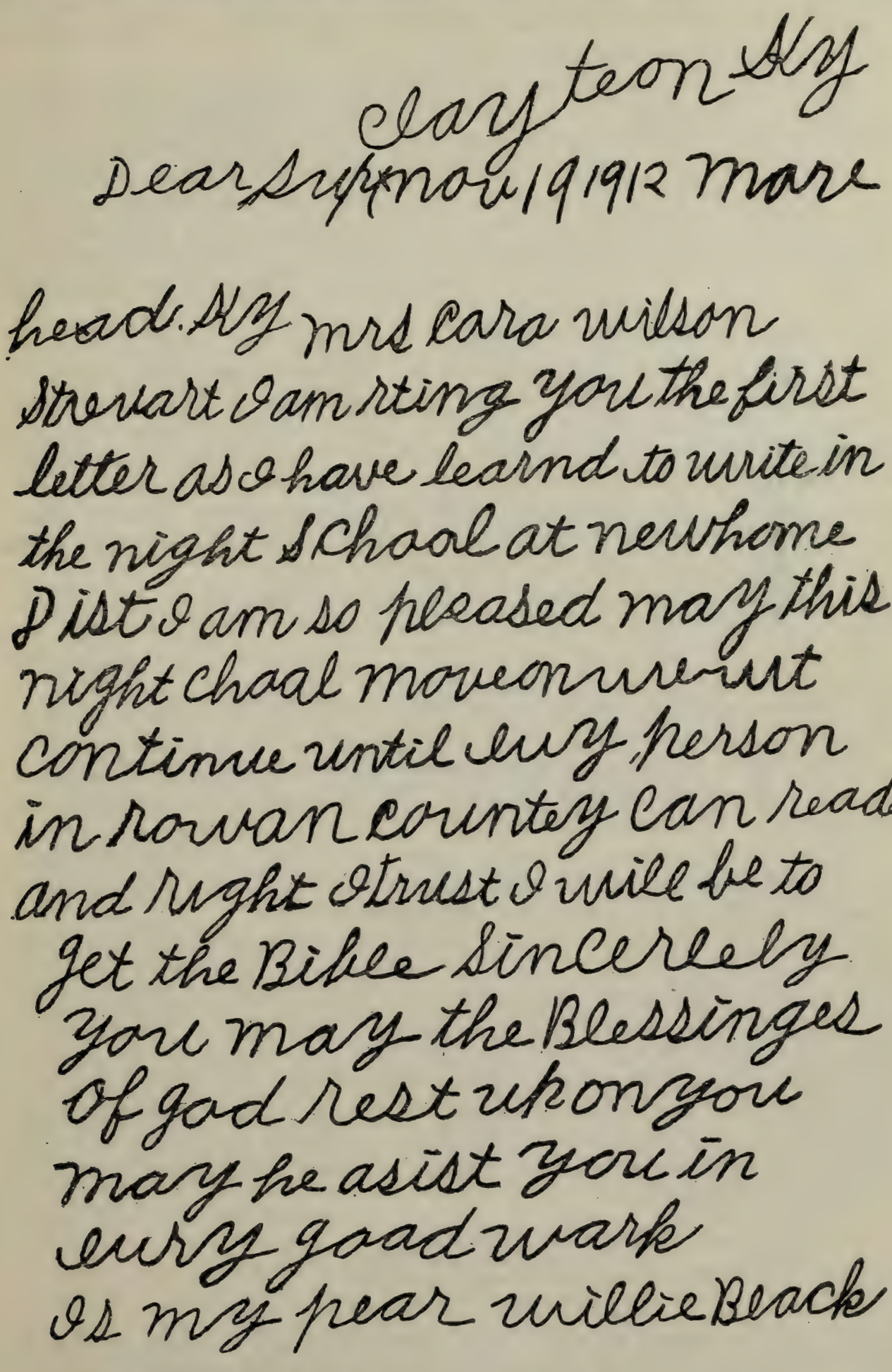
PUPILS IN THE ROWAN COUNTY MOONLIGHT SCHOOLS.

A. NIGHT SCHOOL AT OPEN FORK.

The oldest pupil was 73.

B. A GROUP OF EAGER STUDENTS.

Too much credit can not be given these teachers—faithful, earnest, heroic servants of the Commonwealth—who volunteered to teach by night as well as by day. In


Clayton Ky
Dear Sir nov 19 1912 mare
head. Ky mrs Cara wilson
Stewart I am rting you the first
letter as I have learnd to write in
the night School at newhome
Dist I am so pleased may this
night chool move on we must
continue until every person
in Rowan countey can read
and right I trust I will be to
Get the Bible Sincerely
you may the Blessinges
of God rest upon you
may he asist you in
every good wark
Is my pear willie Beack

LETTER NO. 3. FROM THE FATHER OF TEN CHILDREN.

no crusade or march of progress has more self-sacrifice or heroism been shown than has been displayed by them. Patriots they are, of the truest kind.

From this school, under the instruction of an 18-year-old girl, a beginner in the profession of teaching, a preacher 50 years of age was graduated in reading and writing, for the terms of graduation were only that he should be able to read his Bible and the newspaper with reasonable facility, and should write a legible letter, and both of these he now can do to his unspeakable pride and joy.

He signed his name to the assessor's list, for the first time, after four nights' instruction, and wrote the superintendent a legible, four-page, enthusiastic letter with a period at the close of each sentence as large as a bird's-eye, when he had been a pupil of the school but seven evenings. The youthful teacher was inclined to apologize for the few that she had enrolled, and said: "I didn't have as large school as the others—just four—but they were in earnest, and I did my best for them, and told them that I would teach as long as one of them would come," and then she said with a twinkle in her eye, and an evident thrill of pride, "but I taught a preacher to read and write, and that was something, wasn't it?"

One school of 65 pupils had 23 illiterates, all of whom were taught by a young teacher to read and write. Three preachers were enrolled in this school, and added much by their interest, their zeal, and their influence. In fact, all ministers in the rural sections aided much in the work. They assisted in campaigning and organizing, and the more learned assisted in teaching, while those who were unlearned sought more eagerly than any others to acquire some education. Four preachers were taught to read and write. These and all other beginning students in the night school who learned to read and write and who wrote the superintendent their first letter received as a prize a Bible with their names engraved upon it.

On one of her visits to a moonlight school the writer watched the eager, happy throng come trooping through the moonlight, laughing and talking together in free and easy schoolmate fashion, and as they entered the door noted that there were not only students of all ages, from the maid of 18 and the youth who had just attained his majority to the grandame of 50 and the grandfather of 80, but there were a carpenter, a merchant, a manufacturer, a postmaster, a magistrate, a doctor, a preacher, school trustee, five former teachers, farmers and farmers' wives and their sons and daughter, many educated persons and eight illiterates. That the thirst for knowledge and the determination to reach a more elevated station in life were not confined to any age or any class seemed self-evident, and that the moonlight school met the demands of those in any age and of all these various classes was proven by the fact that they came again and again, and plead for a longer term when its sessions closed.

The studies pursued were, essentially, reading, writing, spelling, and arithmetic, but brief drills were given on the most significant facts in language, history, geography, civics, sanitation, agriculture, and horticulture. With beginners, writing was the most fascinating study, while the more advanced were divided in their preference between arithmetic and agriculture and made most rapid progress in the study of each. Horticulture was discussed and fruit grafting was performed in some schools.

The reading text was a little newspaper, the Rowan County School Messenger, edited by the county superintendent and published weekly for the special benefit of the adult students and furnished to them free of charge. Its motto and the motto of the moonlight schools was:

> The riches of the commonwealth
> Are free, strong minds and hearts of health,
> And more to her than gold or grain
> Are cunning hand and cultured brain.

This paper dealt largely with school and county affairs and was made up of short sentences intended to inspire effort and to arouse the curiosity of the beginner so that he would immediately seek to read the next sentence. And it had the desired effect, for no sentence in any book could have spurred the reader on to seek further as did the announcement that "John Brown has moved to Kansas," for immediately

the desire to know, such as impels the reader of fiction, what was going to happen next, or what had happened, was uppermost, and so there was renewed zeal and effort to master the next sentence and to see who else had moved, and who was visiting, and who had painted or built a new house.

The statements of school improvements, too, served two purposes, one for practice in reading, and the other to arouse the readers to make their district excel the one which was being exploited, and this, also, was effective, for when the people of Slab Camp read the statement "They are putting up window shades and hemstitching curtains for the school at Chestnut Grove," they at once decided that Slab Camp was not going to be behind the rest, and that what Chestnut Grove could do Slab Camp could do, and shades and curtains went up, without delay, in Slab Camp schoolhouse, too. And if one school read that another was germinating seed corn or grafting fruit trees, the same course was adopted by them then and there.

The newspaper contained one poem, running in sections, a stanza or two was to be memorized each week. This was Longfellow's "Psalm of Life," and was learned more for its sublimity of thought, the training of expression, and the acquisition of new words and phrases than as a memory drill. All drill questions on the various branches were published in the paper. Among them all none created a more genuine interest than the drill in language. Drills in the correction of such words as "crick," "kiver," "git," "yit," "hit," "seed," "hyeard," "tuck," "fust," "hain't," "skeered," and many others caused much merriment among even those who had been in the habit of employing them, as well as those who were accustomed only to using the proper forms. All joined heartily in drilling on the correct forms, and afterwards took great pride in using them. Drills on words ending in "g" resulted in the correction of the careless habit of saying "doin'," "goin'," "readin'," "writin'," and of other words which had been abridged in the same way.

The text used in arithmetic was a small book recently published and dealing entirely with the problems of rural life, and meeting adequately the needs of a rural people. This book became most popular and took rank next to the Bible in many homes.

Another school trustee, who attended the night school through the same sense of obligation, received an inspiration and is now a student in the day school, along with his own children, every day.

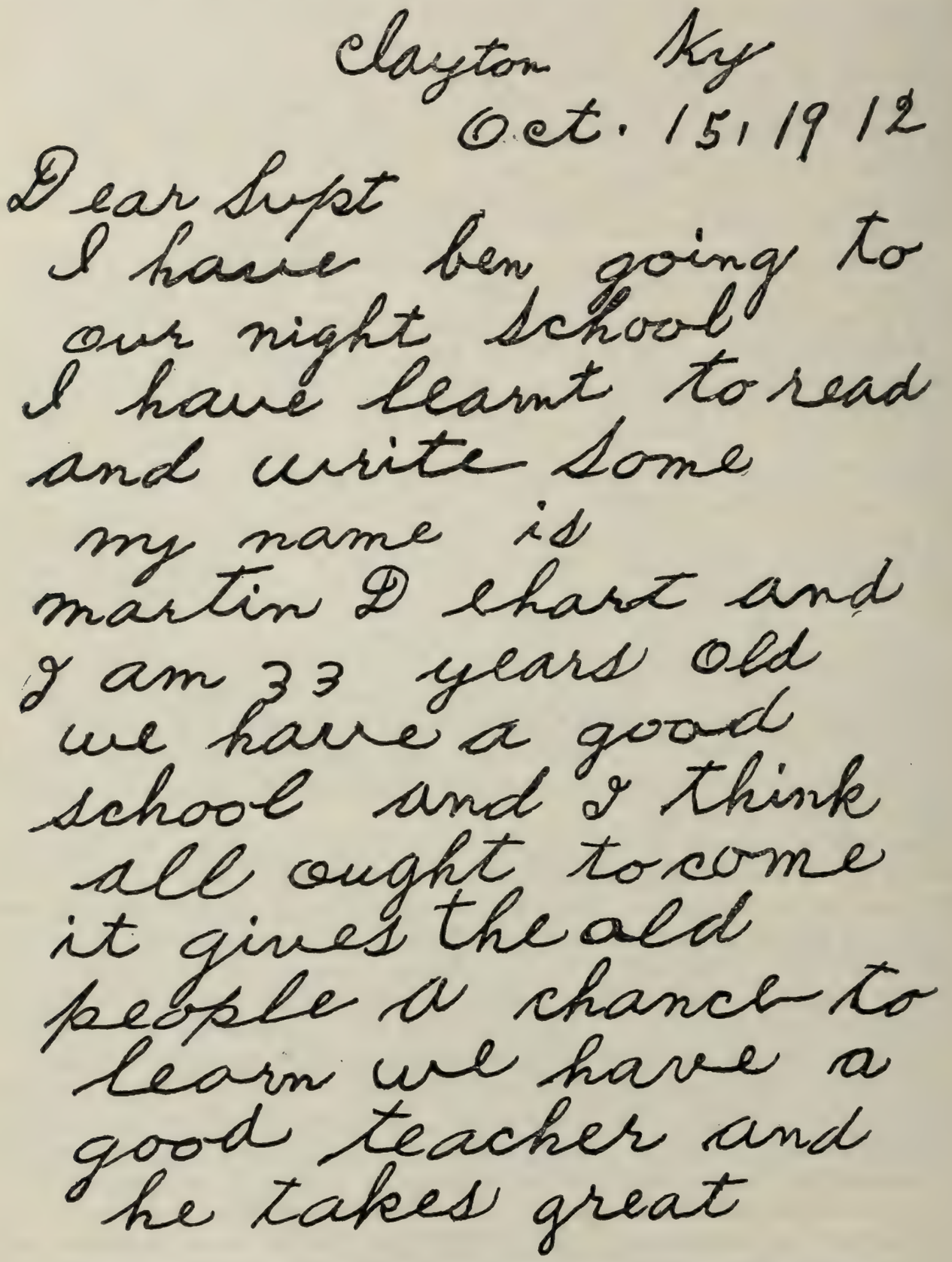
This man is at present secretary of the county board of education, and those who enter a certain remote schoolhouse will not only have turned to them the eager face of his 6-year old son, but will be greeted by the inspired face of this man past 40, a face lighted up with an unusual intellect, high character, and noble purpose. A hungry, appealing look it is at present, for he has high aspirations, and realizes that it is a long step up to them; but one of them is almost within his grasp, and with his spirit of determination and persistence he will reach it, and that is the ambition to be a teacher, and to lead others, as he was led, along the night-school road to a higher education.

One justice of the peace and one ex-magistrate enjoyed the advantages of the night school and afterwards enrolled in day school. In several day schools may be found the child of 5 and the man or woman of 40, and, in every instance, the presence of a determined adult has proven to be an inspiration to both pupils and teacher.

An aged father and mother, parents of 14 children, all of whom had gone beyond the rooftree, and grandparents of 84 grandchildren, learned to read and write, and absent ones, to their surprise and excessive joy, learned that father and mother had been attending Moonlight School and could read and write, and not only was a new world of communication opened to the aged couple, but a new joy and a new uplift and a new dignity was given to their absent ones, making them, doubtless, better citizens of their adopted States.

What has been accomplished in Rowan as a county system has been accomplished in districts here and there this year in other counties. In the Sandy Valley hundreds have enrolled, 400 in Lawrence County alone. In Boyd County in one district it

was tried, and the people responded to the number of 60. In Madison a school was conducted among the tenant class, and was thronged with eager students. At the close of a two weeks' session all these tenants could read and write, and one of them was so elated with his acquirements that he wrote to his landlord, a State official, and informed him that he no longer had an ignorant tenant.


Clayton Ky
Oct. 15, 1912

Dear Supt
I have ben going to
our night school
I have learnt to read
and write some
my name is
martin D short and
I am 33 years old
we have a good
school and I think
all ought to come
it gives the old
people a chance to
learn we have a
good teacher and
he takes great

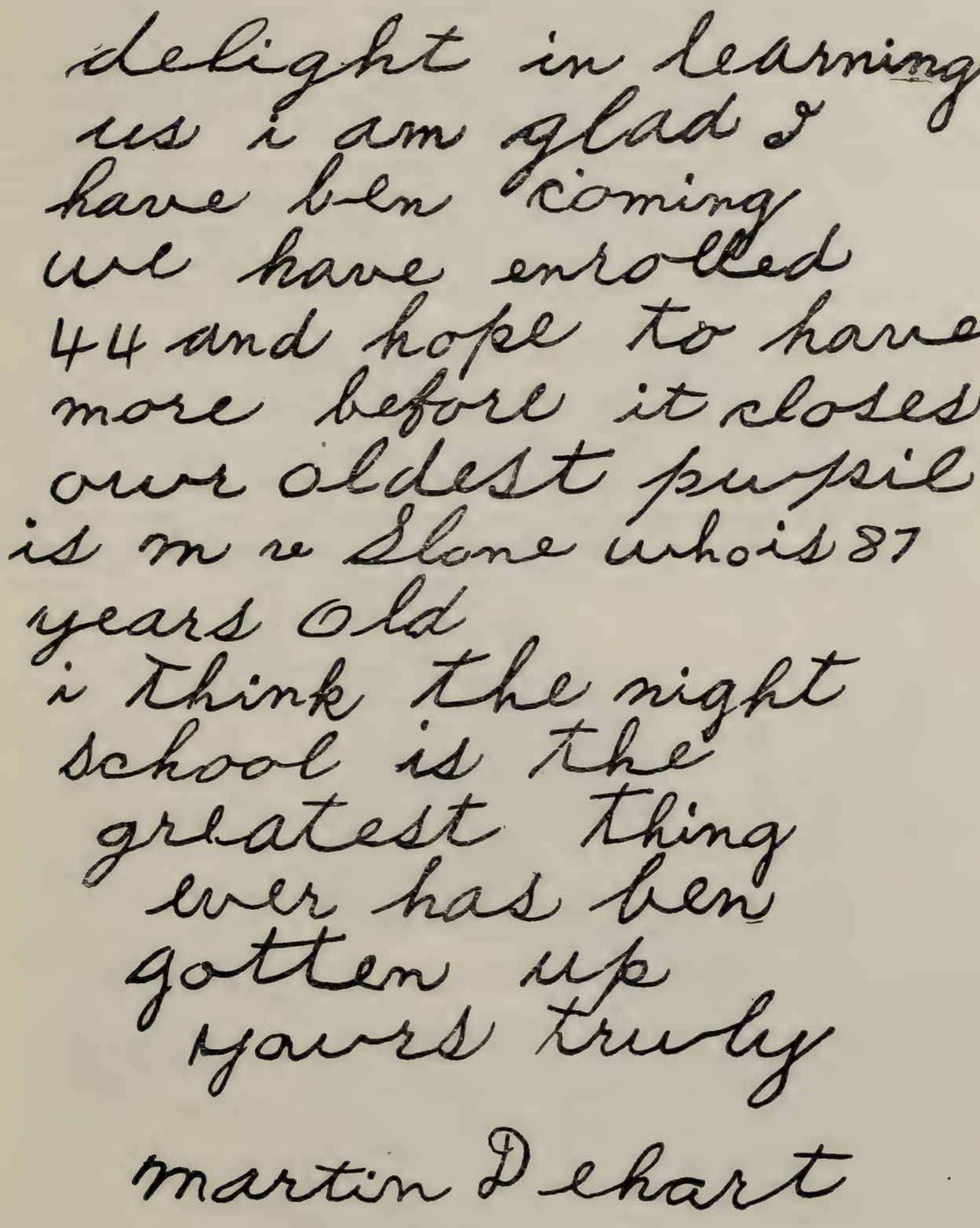
LETTER NO. 4. THE NIGHT SCHOOL LETTER WHICH WON FIRST PRIZE.

In Garrard County, at Buena Vista, a noble teacher opened the school for night sessions, and found an anxious crowd of adults to greet her each evening, students who plead for a lengthened term.

One middle-aged man was so fascinated by the ability to write his name that he wrote it over and over again for two whole days, and was the more elated at every stroke.

One father and mother came into a school one night with six grown sons, three of whom were married, and all voters. Within two nights both parents and sons could write their names, and within two weeks they could all write a respectable letter.

John Dehart declares in his first letter that he would not take $10,000 for what he has learned. Doubtless, besides the increased happiness and usefulness, the knowledge which he has gained will add that much to his earning capacity during the rest



delight in learning
us i am glad I
have ben coming
we have enrolled
44 and hope to have
more before it closes
our oldest pupsil
is m r Slone who is 87
years old
i think the night
school is the
greatest thing
ever has ben
gotten up
yours truly

martin Dehart

LETTER NO. 4—Continued.

of his lifetime, for he is but 25 years old and belongs to a family of remarkable vigor and noted longevity. John has come to realize his possibilities, and has caught a vision of higher achievements, and has enrolled as a regular scholar in the day school since the night school closed.

In fact, more than one adult has found in the day school a lengthened opportunity, after the night-school sessions were over. Last year a school trustee of limited education attended the school at night, partly as an official duty, and also to accompany

his wife, who was the teacher. During the session he caught a glimpse of possible power and service, and enrolled immediately in the day school, and attended every day, being taught by his wife. When the day school closed, he entered a private normal school, applying himself assiduously until summer, when he secured a certificate to teach. This year he is one of the most earnest and successful teachers in Rowan County and in both day and night school he manifests a spirit of consecration only possible to one who has come into the service along a rugged path, beset by many difficulties. He, at least, can sympathize in the fullest with his adult students as they bend over book, copy book or newspaper.

As every teacher was inspired with the idea that he was upbuilding the Commonwealth, as well as uplifting humanity, every citizen had pride in assisting his neighbor to be and in making of himself a more useful factor of society and a more intelligent citizen. A man redeemed from illiteracy became at once a source of pride and admiration to his neighbors, as well as to himself and his family, and, like most new converts to a cause, he exceeded the old adherents in zeal and loyalty and became a most enthusiastic advocate of the cause of education, faithfully supporting the compulsory school law, the school improvement league, the library, and all the aids to education.

The solution of many of the problems of the day school have come about through the night school; parents who, after they became students and inmates of the school, came to see the necessity of certain improvements to which they had hitherto been apparently blind. In one district for 20 years children had hopped across the creek from one stone to another and had scrambled up a steep, slippery bank to the school. The parents and grandparents had hopped and scrambled but a few nights until they discovered that a footbridge across that stream was an immediate necessity, and the agitation for a footbridge was at once begun.

○

A SPELLING MATCH.

A. MATHEMATICS IS AN ABSORBING STUDY.

B. THIRST FOR KNOWLEDGE NOT QUENCHED BY PASSING YEARS.

UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1913, NO. 21 - - - - - - - - WHOLE NUMBER 531

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

COMPILED BY THE LIBRARY DIVISION OF THE BUREAU OF EDUCATION, UNDER THE DIRECTION OF JOHN D. WOLCOTT, ACTING LIBRARIAN

JUNE, 1913

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

INTRODUCTORY NOTES.

Some notable books and articles mentioned in the following pages are: Brereton, Studies in foreign education; Comandini, Il problema della scuola in Italia; Kuo, Effect of the revolution upon the educational system of China; Boutroux, Education and ethics; Weeks, Education of to-morrow; Yocum, Culture, discipline, and democracy; De Garmo, Aesthetic education; International Kindergarten Union, Committee of Nineteen, Report; Lull, Inherited tendencies of secondary instruction in the United States; Foster, The college president; Roosevelt, High school and college; Dresslar, School hygiene; Dewey, An undemocratic proposal; Mühlmann, Reiseberichte.

Of the publications listed in this bulletin, only those named in the section headed "Bureau of Education: Recent publications" are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or in the case of an association publication, from the secretary of the issuing organization.

A directory of the periodicals indexed in the following pages may be found at the end of this bulletin. Many others besides those named have been examined in search of important educational material.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

With this issue the Monthly record suspends publication for the summer.

PUBLICATIONS OF ASSOCIATIONS.

829. **American medical association. Council on medical education.** Report of the ninth annual conference, Chicago, February 24, 1913. Chicago, The Association, 1913. [39]–117 p. 8°. (American medical association bulletin, v. 8, no. 4, March 15, 1913.) (N. P. Colwell, secretary of Council, Chicago, Ill.)

Contains: 1. A. D. Bevan: Third classification of colleges, p. 44–49. 2. N. P. Colwell: Present status of medical education, p. 49–55. 3. Abraham Flexner: The European side of medical education, p. 56–64; Discussion, p. 64–70. 4. H. P. Judson: Necessity of a readjustment of preliminary and collegiate education prerequisite to medicine, p. 70–74. 5. E. H. Bradford: Organization of the medical school, p. 74–77. 6. C. F. Thwing: The organization of medical schools, p. 77–80. 7. G. E. Vincent: Organization of the medical school, p. 80–84; Discussion, p. 84–88. 8. H. D. Arnold: Hospitals and their relationship to clinical and postgraduate medical teaching, p. 88–97; Discussion, p. 97–104. 9. J. A. Witherspoon: The medical profession and medical education, p. 114–17.

830. **Brown university teachers' association.** [Addresses at the meeting held March 1913, at Providence, R. I.] Education, 33: 527–69, May 1913.

Contains: 1. Greater flexibility in college entrance requirements—W. H. Holmes: The needs of the high schools, p. 527–36; H. B. Huntington: The attitude of the colleges, p. 537–44; H. N. Davis: The new Harvard plan, p. 545–51. 2. The eye and the printed page—G. M. Whipple: The eye movements in reading, p. 552–58; T. H. Briggs: The right way to read, p. 559–62; H. L. Koopman: How students actually read, p. 563–69.

831. **Illinois. University. School of education.** High school conference. Proceedings, November 21, 22, 23, 1912. Ed. by H. A. Hollister. Urbana, Ill., The University [1913] 230 p. 8°. (University of Illinois bulletin, vol. 10, no. 19, February 3, 1913)

Contains: 1. E. P. Cubberley: The California system of high school support, p. 11–23. 2. L. C. Lord: Report of the Conference committee on the standard of preparation both in scholarship and professionally for high school teachers, p. 23–29. 3. A. L. Odenweller: A view of community high schools under the act of 1911, p. 35–40. 4. F. M. Leavitt: Place of industries in education, p. 41–43; Discussion by W. A. Richards, p. 43–46. 5. Carl Colvin: School and home gardens, p. 54–59. 6. Suggested syllabus of high school zoölogy, p. 71–81. 7. The ideal scheme of study for a four years' high school [commercial] course, considered from the viewpoint of the high school, university, and the business community, [by] T. H. Ziegler, p. 91–94; [by] E. F. Burch, p. 94–96; [by] W. E. Hotchkiss, p. 96–100. 8. W. W. Hatfield: High school graduates' opinions of their training in English composition, p. 119–23. 9. F. S. Needham: The course of study in machine drawing for high schools, p. 153–56. 10. R. L. Sandwick: Teaching the modern languages, p. 169–75. 11. C. E. Lawyer: The value of music courses in the high school, p. 186–88. 12. F. D. Barber: Teaching of chemistry in relation to daily life, p. 190–200. 13. C. R. Mann: Bringing physics close to the daily life, p. 200–207.

832. **London county council. Conference of teachers, 1913.** Report of proceedings. London, P. S. King and son, 1913. 72 p. f°.

Contains: 1. C. S. Cobb: Montessori method in education, p. 1–2. 2. Madame Pujol-Ségalas: Function of the teacher in the education of young children, p. 2–4. 3. Evelyn Lidbetter: Teaching of writing and reading—the value of muscular memory, p. 5–6. 4. Miss H. Pizer: Free discipline in large classes of children, p. 6–11. 5. G. F. Daniell: Influence of school books upon eyesight, p. 11–15. 6. J. Kerr: Reading and writing from the medical point of view, p. 15–18. 7. Edward Johnston: General principles of handwriting, or the teaching of handwriting as penmanship, p. 18–22. 8. J. W. Adamson: Attention: The child's point of view, p. 23–25. 9. C. L. Burt: Relation of attention to instinct and interest, p. 25–27. 10. T. H. Pear: Recent researches on the subject of attention, p. 28–34. 11. L. E. Hill: Open-air and exercise, p. 34–39. 12. Kate Truelove: Instruction in infant care in girls' schools, p. 39–41. 13. A. J. Green: Value of the open-air school, p. 41–48. 14. Miss Dixon: Suggestions for toymaking, p. 48–50. 15. B. H. Clift: Handwork in a junior mixed school, p. 50–53. 16. W. F. Fowler: Teaching of handicraft in the lower standards, p. 53–58. 17. F. R. Hurlstone-Jones: Economics for schoolboys, p. 59–61. 18. Miss E. S. Evans: How to encourage the love of home reading, p. 61–65.

833. **National commercial teachers' federation.** Proceedings . . . at the sixteenth annual convention, held at Spokane, Wash., July 15, 16, 17, 18, 1912. Published by the Association. 174 p. 8°. (W. E. Ingersoll, general secretary, Portland, Oreg.)

Contains: 1. Z. P. Smith: Co-operation, p. 27–30; Discussion, p. 30–36. 2. T. F. Campbell: Bookkeeping in the business college—present results compared with possibilities, p. 49–56. 3. M. M. Higley: What should be required before a diploma is granted? p. 61–65. 4. E. B. Moore: How to maintain interest by tests, examinations, and prizes, p. 83–88; Discussion, p. 88–90. 5. Lora L. Bowman: How to introduce students to the study of shorthand, p. 90–95; Discussion, p. 95–97. 6. Frances Effinger-Raymond: If I were a teacher of English, p. 102–106; Discussion, p. 106–108. 7. V. E. Madray: To what extent is the office practice practical for the high school? p. 119–23; Discussion, p. 123–24. 8. E. A. Bryan: The commercial teacher's work, p. 128–32.

834. **New Mexico educational association.** Journal of proceedings and addresses of the twenty-seventh annual meeting, held at Albuquerque, N. Mex., November 6–9, 1912. Santa Fe, N. Mex., Published by the Association, 1912. 166 p. 8°. (R. F. Asplund, secretary, Santa Fe, N. Mex.)

Contains: 1. W. A. Poore: The recognition of teaching as a profession, p. 47–60. 2. A. N. White: The next most important step in educational progress in New Mexico in the rural schools, p. 60–68. 3. T. W. Conway: The next most important step in educational progress in New Mexico in city schools, p. 79–83. 4. A. N. White: What the department of education can do to promote peace teaching in the schools of the state, p. 98–100. 5. J. L. G. Swinney: Qualifications

and scholarship of a county superintendent of schools, p. 104–107. 6. Susie Whitaker: Office training for high-school students, p. 111–14. 7. Helen M. Calkins: An ideal high school commercial course, p. 116–20. 8. M. H. Brasher: Manual training and industrial training, initial cost, and comparative value of this work, p. 124–31. 9. W. F. Osborne: Introduction of manual arts in small town and graded schools, p. 131–34. 10. Mrs. T. B. White: Industrial education for small schools lacking the means for extensive equipment without specially trained teachers, p. 141–44. 11. M. H. Brasher: What the curriculum or the course of study should include to meet the needs of present-day conditions of life, p. 156–63.

835. **Pennsylvania state educational association.** Report of proceedings, with papers read before the general sessions, departments and round table conferences. Harrisburg, December 26–28, 1912. Reprint from Pennsylvania school journal, 1913. 256 p. 4°.

For contents, see separate entries for sections—items 486, 487, 629, 836, 837.

836. ——— **College and normal school department.** [Proceedings of the session held at Harrisburg, December 26, 1912] Pennsylvania school journal, 61: 467–74, April 1913.

Contains: 1. F. N. Buchman: The part played by the Young men's Christian association [in moral education in our higher institutions of learning], p. 467–68. 2. Anna J. McKeag: Moral education, p. 269. 3. H. D. Sheldon: College course in ethics as a means of moral education, p. 469–72. 4. H. M. J. Klein: Moral education in our higher institutions of learning, p. 472–74.

837. ——— **High school department.** Proceedings of the eighth annual session, at Harrisburg, December 27–28, 1912. Pennsylvania school journal, 61: 435–67, April 1913. (J. F. Adams, secretary, Millersburg, Pa.)

Contains: 1. E. Marie Lentz: Standardization of history teaching, p. 442–44. 2. R. E. Thompson: Teaching of political economy in high schools, p. 444–46. 3. N. E. Henry: Humanization of Latin, p. 446–50. 4. S. P. Uhler: Teaching German to best purpose, p. 451–53. 5. Eda A. Weiskotten: Teaching German in high school, p. 453–54. 6. A. G. Frank: Place of the text in modern language instruction, p. 454–57. 7. Lillian M. Adams: Problems in teaching English, p. 458–59. 8. A. J. Meredith: Extension work in commercial education, p. 459–63. 9. Control of high school athletics, p. 465–67.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

838. Agricultural instruction in secondary schools. Papers read at the third annual meeting of the American association for the advancement of agricultural teaching, Atlanta, Ga., November 12, 1912. Washington, 1913. 51 p. (Bulletin, 1913, no. 14.)

CONTENTS: 1. H. L. Russell, K. L. Butterfield: Opportunity and responsibility for preparation of teachers of agriculture. 2. W. G. Hummel: First year's work in agriculture in the high school. 3. A. M. Scule: Experiment stations and secondary schools of agriculture. 4. C. G. Selvig, R. W. Stimson: Use of land in connection with agricultural teaching. 5. Appendix A–E.

839. Annotated bibliography of medical inspection and health supervision of school children in the United States for the years 1909–1912. Washington, 1913. 132 p. (Bulletin, 1913, no. 16.)

840. Bibliography of industrial, vocational, and trade education. Washington, 1913. (Bulletin, 1913, *in press*.)

Annotated list of the more important books, reports, articles from periodicals, etc., from 1900 to date.

841. The fifteenth international congress on hygiene and demography, held in Washington, D. C., from September 16 to October 5, 1912. Washington, 1913. 57 p. (Bulletin, 1913, no. 18.)

CONTENTS: I. Some lessons and suggestions from the exhibition, by F. B. Dresslar. II. Digests of some of the papers presented at the congress.

842. Report of the Committee of the National council of education on standards and tests for measuring the efficiency of schools or systems of schools. Presented by the chairman of the committee, George Drayton Strayer. Washington, 1913. 23 p. (Bulletin, 1913, no. 13.)

843. A trade school for girls. A preliminary investigation in a typical manufacturing city—Worcester, Mass. By the Research department of the Women's educational and industrial union of Boston. Washington, 1913. 59 p. (Bulletin, 1913, no. 17.)

BOOKS, PAMPHLETS, PERIODICAL ARTICLES.

EDUCATIONAL HISTORY.

844. **Eitle, J.** Der unterricht in den einstigen württembergischen klosterschulen von 1556–1806. Berlin, Weidmann, 1913. 84 p. 8°. (3. Beiheft zu der "Zeitschrift für geschichte der erziehung und des unterrichts.")
A scholarly and interesting historical treatment of monastic instruction in Württemberg.

845. **McCormick, Patrick Joseph.** Education of the laity in the early middle ages. Washington, D. C., 1912. 65, [1] p. 8°.
Thesis (Ph. D.)—Catholic university of America, 1911.

846. **Warncke, J.** Mittelalterliche schulgeräte im museum zu Lübeck. Zeitschrift für geschichte der erziehung und des unterrichts, 2: 227–50, heft 4, 1912.
Describes mediæval school apparatus recently found in Lübeck.

PRESENT SITUATION.

847. **Brereton, Cloudesley.** Studies in foreign education, with special reference to English problems. London, G. G. Harrap & company, 1913. xii, 302 p. 12°.
Contains the following studies reprinted from various sources: 1. A comparison between French and English secondary schools. 2. Thirty years of university education in France. 3. French rural education. 4. The true inwardness of moral instruction in France. 5. Physical education in France. 6. The infant schools of France. 7. The Paris international guild. 8. A look around German schools. 9. The new way of teaching classics in Germany. 10. Toward France or Germany? English education at the crossways. 11. A bird's-eye view of American education.

848. **Comandini, Ubaldo.** Il problema della scuola in Italia. Vol. primo. Istruzione primaria e popolare. Roma, Bontempelli e Invernizzi, 1912. xi, 556 p. 8°.

849. **Dathe, Hans.** Die deutsche schule als klägerin. Pädagogisches archiv, 55: 228–49, heft 4, 1913.
Sums up contemporary criticism of the German schools.

850. **Finegan, Thomas E.** Elementary education. From the Ninth annual report of the New York State Education department. Albany, 1913. [13]–107 p. illus. 8°.
Prepared by the Third assistant commissioner of education of New York.

851. **Gottschalk, R.** "Americana paedagogica." Deutsche schule, 17:138–43, March 1913.
An entertaining review of Fr. Beck's book on American education.

852. **Kiess, Kurt.** Zweiter deutscher kongress für jugendbildung und jugendkunde zu München. Pädagogisches archiv, 55:145–62, heft 3, 1913.
Gives a good idea of subjects currently discussed in German educational meetings, e. g.: Present conception of education, special schools, arbeitsschule, general common school, unification of education.

853. **Kuo, P. W.** The effect of the revolution upon the educational system of China. Educational review, 45:457–70, May 1913.
At the present time the Government and the people of China show a strong tendency to emphasize primary education.

854. **Matarollo, G.** La scuola elementare in Roumania. Rivista pedagogica, 6:280–302, April 1913.

855. **Schultze, Ernst.** Kind oder dollar. Deutsche schule, 17:210–17, April 1913.
The writer describes with evident amazement the American way of giving publicity to school needs—as exemplified by Greenwich, Conn.

856. **Smith, John.** Broken links in Scottish education. London, J. Nisbet & co., limited, 1913. 178 p. 8°.
CONTENTS: 1. A forgotten chapter in Scottish education. 2. Our school board system of education. 3. Education after fourteen years of age. 4. A broken link in Scottish education. 5. The training of teachers. 6. The junior student system. 7. The education problem in Scotland. 8. A Scottish education committee. 9. Appendix.

857. **Trensch, G.** Die norwegische volksschule. Pädagogische zeitung, 42:247–50, March 27, 1913; 265–68, April 3, 1913.
Historical and descriptive.

858. **Voize, Jean-Raymond.** En Allemagne.—La ville et les écoles. Revue de l'enseignement des langues vivantes, 30: 202–10, April 1913.
Germany and German schools from the point of view of a young French student.

859. **Weir, Preston.** Where education fails. With an introduction by the Rt. Hon. Lord Sheffield. London, Ralph, Holland & co. [1913] 114 p. 12°.
Makes this criticism upon English education: "The forces which at present play upon the schools are not sufficiently penetrative, they bear help and encouragement to the clever, who require it least; but they do not reach the great average mass, which is still untaught and untrained."

PEDAGOGICS AND DIDACTICS.

860. **Boutroux, Emile.** Education and ethics. Authorized translation by Fred Rothwell. London, Williams & Norgate, 1913. xliv, 236 p. 12°.
Asserts that "education, in its true and complete meaning, is not the acquisition of any particular habit or knowledge, but rather the cultivation of the human being, with all his physical, intellectual, and moral powers."

861. **Bulley, Margaret H.** Beauty as an educational force. Parents' review, 25: 359–78, May 1913.

862. **Chancellor, William Estabrook.** Better school teaching. Educational foundations, 24: 517–32, May 1913.
"The second article of an important series."

863. **Hamilton,** *Sir* **Ian.** National life and national training. London, P. S. King & son, 1913. 55 p. 12°.

864. **Hubbard, Frank Gaylord.** Education and leisure. The chairman's address, delivered on Thursday, December 26, 1912, in Indianapolis, Ind., at the eighteenth annual meeting of the Central division of the Association. (Reprinted from the Publications of the Modern language association of America, xxviii, 1) [Cambridge, Mass.] 1913. lxxi–xc p. 8°.

865. **Hübler, M.** Friedrich Paulsen's pädagogik. Lehrerin, 30: 17–19, April 19, 1913.
Analyzes Paulsen's work as a representative of teleological ethics. Paulsen "looked forward to a more complete victory of national unity over sectarianism in education."

866. **Levi, Giulio A.** Programmi, vocazioni, educazione. Nuovi doveri, 7: 83–112, March–May 1913.
Insists upon the principle of differentiated education for different personalities and vocations, and objects vigorously to imposed programs.

867. **Remy, Matilda M.** Why not specialization in the elementary school? Ohio educational monthly, 62: 198–200, May 1913.
Holds that teachers in the elementary schools should specialize and teach the same subject through the grades.

868. **Weeks, Arland D.** The education of to-morrow. The adaptation of school curricula to economic democracy. With an introduction by M. V. O'Shea. New York, Sturgis & Walton company, 1913. x, 232 p. 12°.

Prof. Weeks maintains that true knowledge always assists its possessor to adjust himself to the world in which he lives, and that if pupils in the schools are given this knowledge they will receive culture in the process.

869. **Weimer, Hermann.** The way to the heart of the pupil. Authorized translation by J. Remsen Bishop . . . Adolph Niederpruem . . . with special author's preface for American readers. New York, The Macmillan company, 1913. xiii, 178 p. 12°.

This book is a protest against mechanical methods in the general relationship of teacher and pupil, with special reference to the present movement concerned with mechanical measurement of results of the teacher's work.

870. **Yocum, A. Duncan.** Culture, discipline, and democracy. Philadelphia, C. Sower company, 1913. 320 p. 12°.

Author believes that "for the majority of individuals who do not continue to lead the life of academic specialists, no discipline can be lasting or culture continuing which is not closely related to every-day life."

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

871. **Calfee, Marguerite.** College freshmen and four general intelligence tests. Journal of educational psychology, 4: 223–31, April 1913.

"The four tests used in this investigation were card-dealing, card-sorting, alphabet-sorting, and the mirror test. In all four tests the girls were uniformly faster than the boys. Comparison is also made with the performance of elementary school pupils."

872. **Colvin, Stephen S.** The practical results of recent studies in educational psychology. School review, 21: 307–22, May 1913.

Shows psychological effects of drill. Experimental investigations indicate "that drill, when conducted under proper conditions, is an extremely important factor in efficient instruction." Discusses questions asked by teachers, etc.

873. **Gibbs,** *Mrs.* **David.** The instincts of children. Their value and importance in education. Progressive teacher, 19: 12–14, May 1913.

The sexual instinct.

Continued from the April number. The first installment appeared in the January issue.

874. **Heck, W. H.** A second study of mental fatigue in relation to the daily school program. Psychological clinic, 7: 29–34, April 15, 1913.

This report deals with an experiment with sixteen classes, containing 573 pupils, in three Lynchburg (Va.) schools.

875. **Ogden, Robert Morris.** The relation of psychology to philosophy and education. Psychological review, 20: 179–93, May 1913.

"Presidential address, delivered before the Southern society for philosophy and psychology at the Johns Hopkins university, April 8, 1913."

876. **Pauchet, Victor.** Rôle de l'auto-suggestion dans l'éducation. Éducateur moderne, 8: 158–162, April 1913.

SPECIAL METHODS OF INSTRUCTION.

877. **Assmus, Walter.** Die erziehliche bedeutung der wandervereine. Monatshefte der Comeniusgesellschaft, 22: 34–39, April 1913.

Attempts to find a place in present-day education for the tramping clubs (wandervereine) that are so numerous in Germany.

878. **Brewer, Charles B.** The widening field of the moving-picture. Its commercial, educational, and artistic value. Century magazine, 86: 66–78, May 1913.

879. **Holliday, Carl.** The motion picture teacher. World's work, 26: 39–49, May 1913.

Pedagogical value described. Shows what has been done in public schools with the moving picture as an aid to education.

880. **Kemsies, Ferdinand.** Hygiene und gymnastik im film. Zeitschrift für schulgesundheitspflege, 26: 243–48, April 1913. illus.
Cinematograph as supplementary aid in teaching hygiene and physical education.

881. Eine kinematographische studiengesellschaft. Monatshefte der Comeniusgesellschaft 22 : 40–41, April 1913.
Announces the establishment of a "Society for the study of motion pictures," with the purpose of helping the cause of educational films.

882. **Reicke, Erich.** Zur methodik der schulkinematographie. Geographischer anzeiger, 14: 51–54, heft 3, 1913.
Reviews possibilities of motion pictures in teaching geography and indicates a method of using them to best advantage.

883. **Sanderson, F. W.** The kinematograph as an aid in education. School world, 15: 166–70, May 1913.
A paper read before the educational conference at the international kinematograph exhibition, London, March 28 1913.
Advocates the kinematograph as a means of distributing information, and describes its special use in the teaching of geography, history, and the natural sciences.

884. **Whitby, Harry A.** New schools for old. Westminster review, 179: 385–96, April 1913.
Describes the écoles nouvelles of France and Switzerland, and the landerziehungsheime of Germany and Austria. Contrasts them with English public schools.

SPECIAL SUBJECTS OF CURRICULUM.

885. **Black, Norman Fergus.** English for the non-English. Regina, Sask., Regina book shop [1913] 211 p. 12°.
Presents the importance of making English a common tongue, familiar to all citizens, and the means which experience, both in the British Empire and in the United States, has shown best adapted to gaining this end.

886. **Brown, Horace G.** Dramatization in history teaching. Elementary school teacher, 13: 425–33, May 1913.
Describes the essentials of dramatization. Elements considered under the following heads 1. Motif and effect. 2. Unity. 3. Harmony. 4. Spirit.

887. **Channing, Edward.** Teaching of American history in schools and colleges. History teacher's magazine, 4: 121–23, May 1913.

888. **Clarahan, Mamie M.** An experimental study of methods of teaching high-school German. Columbia, Mo., University of Missouri, 1913. 32 p. 8°. (University of Missouri bulletin. Educational series, vol. 1, no. 6.)
Enumerates following methods: Grammar, Natural, Psychological (Gouin), Phonetic (Direct?), Reading. Reports results of experiments with various methods.

889. **Collins, Frank H.** Drawing and constructive work for elementary schools. . . . With the course of study adopted by the Board of education of the city of New York and the syllabus in each of these subjects, adopted by the Board of superintendents. New York, C. Scribner's sons, 1913. 108 p. illus. f°.

890. **Cox, John Harrington.** What is the best preparation for the college teacher of English? Training for teaching and training for research. English journal, 2: 207–14, April 1913.
"A paper read before the English section of the Central division of the Modern language association at Indianapolis, December 27, 1912."

891. **De Garmo, Charles.** Aesthetic education. Syracuse, C. W. Bardeen, 1913. xi, 161 p. illus. 12°. (Cornell study bulletins for teachers, no. 6)
This book takes as its motto: "An aesthetic view of the world for every child." It shows how and where to look for beauty, not alone in pictures and statues, but also in nature and in the domain of mechanics and of the arts that pertain to daily living.

892. **Genthe, Karl W.** Das system der höheren schulen Amerikas und der biologische unterricht. Monatshefte für den naturwissenschaftlichen unterricht, 6: 199–213, heft 4, 1913.

This instalment of the article previously noted contains interesting comment on the school garden movement in the United States, Arbor Day, etc.

893. **Goldwasser, Israel Edwin.** Method and methods in the teaching of English. Boston, New York [etc.] D. C. Heath & co. [1913] 301 p. 12°.

894. **Hart, Walter W.** Good form in mathematics. Wisconsin journal of education, 45: 94–95, April 1913.

Discusses good form in the preparation of written exercises in mathematics.

895. **Louthan, Hattie Horner.** A plea for commercial English. Colorado school journal, 28: 23–27, April 1913.

Discusses the unpopularity of the instruction commonly classed as Business English, the cause of and suggested remedies for that unpopularity.

896. **Nott, Jane P.** Poetry as a factor in education. Parents' review, 25: 347–58, May 1913.

897. **Pinloche, A.** Rapport sur la Sixième colonie française de vacances en Allemagne (1912). Revue universitaire, 22: 321–28, April 1913.

The colonies were organized by the Club français de conversation allemande et italienne. The colonists are French boys and girls, who are sent to live in German families for a short time.

898. **Schröder, Johannes Carl August.** Die neuzeitliche entwicklung des mathematischen unterrichts an den höheren mädchenschulen Deutschlands insbesondere Norddeutschlands. Leipzig und Berlin, B. G. Teubner, 1913. xii, 183 p. diagrs. 8°. (Abhandlungen über den mathematischen unterricht in Deutschland veranlasst durch die Internationale mathematische unterrichtskommission. bd. I. hft. 5)

899. **Smith, David Eugene.** Certain problems in the teaching of secondary mathematics. Mathematics teacher, 5: 161–79, March 1913.

"An address given before the New England association."

900. **Tassin, Algernon.** The disclosures of a college elocution class. Educational review, 45: 485–500, May 1913.

Recommends illuminative oral reading. Emphasizes (1) reading aloud, (2) re-turning the thought in paraphrase and abstract.

901. **Thomas, C. E.** English for industrial pupils. English journal, 2: 241–46, April 1913.

Discusses briefly the reasons why English for industrial pupils should be different from the regular English course, and indicates the character of the work which is being done with the industrial classes at Woodward high school, Cincinnati, Ohio.

902. **Winship, A. E.** The vision of public school music. Journal of education, 77: 507–508, May 8, 1913.

"Address in Chicago, April 22, 1912, National federation of music clubs."

903. **Wolfson, Arthur M.** Efficiency of the history recitation. Educational review, 45: 444–56, May 1913.

Lays stress on methods of teaching. Says that history teachers of this country have devoted too much attention to questions regarding the course of study.

KINDERGARTEN AND PRIMARY SCHOOL.

904. **Findlay, J. J.** The Montessori system; report of an investigation recently conducted at the Fielden school. Educational times, 66: 203–207, May 1, 1913.

Describes an investigation of the principles of the Montessori system applied to a special class of children, in order to ascertain to what extent the children would benefit by it. The results are carefully analyzed from a diary record of each child and from personal observation.

905. **Flowers, Ida V.** Suggestions for class management and seat work in the first grade. Atlantic educational journal, 8: 303–306, April 1913.
Furnishes some suggestions of a practical nature, resulting from careful study and observation.

906. **International kindergarten union. Committee of nineteen.** The kindergarten. Reports . . . on the theory and practice of the kindergarten. Boston, New York [etc.] Houghton Mifflin company [1913] xvi, 301 p. 8°.
CONTENTS: Preface, Lucy Wheelock. Introduction, Annie Laws. First report, Susan E. Blow. Second report, Patty Smith Hill. Third report, Elizabeth Harrison.

907. **Madden, Maude W.** A peep into a Japanese primary school. Primary education, 21: 269–71, May 1913.

908. **Rodman, Pattie A.** What the kindergarten is doing. Kindergarten review, 23: 579–88, May 1913.
Begun in April number.

909. **Townsend, Janet S.** [Montessori training class for teachers] McClure's magazine, 41: 184–94, June 1913.
Describes the opening of the first Montessori training class for teachers at Rome.

RURAL EDUCATION.

910. **Barnes, Walter.** English in country schools. Self-education of the country teacher. Texas school journal, 30: 11–15, April 1913.
Mentions a few ways in which the country teacher who is really anxious to improve his teaching can do so.

911. **Bricker, Garland A.** Solving the rural recreation problem. Rural educator, 1:66–71, May 1913.
Gives reasons for the lack of social enjoyment and recreation in rural communities, and the remedies for the lack.

912. **Brown, C. J.** Grade limitation for one-room schools. School news and practical educator, 26: 414–15, May 1913.
Continued from April number.

913. **Hoffman, U. J.** The country school. School news and practical educator, 26:411–12, May 1913.
Claims that the needs of the country school are first, good country teachers, second, enough children in regular attendance, third, better public interest.

914. **Israel, Henry,** *ed.* The country church and community cooperation. New York, London, Association press, 1913. 170 p. 12°.
Contains papers read at the third Country church conference, held at the building of the International committee of Young Men's Christian associations, New York, November 14, 1912, as follows: 1. T. S. Settle: Community cooperation—The country school and the country church. 2. G. Walter Fiske: Religious education as a factor in training for country life. 3. Henry Israel: A coordinating factor. 4. M. S. Stone: Educational readjustment of country life. 5. Wickliffe Rose: How a whole community is being helped. 6. H. N. Morse: Value of a social survey to a community 7. John Brown, jr.: A method of making a survey. 8. J. H. Dillard: The new rural South. 9. A. C. Hurd: Religious and educational cooperation with county and state fairs. 10. E. K. Jordan: Play a socializing factor in rural communities. 11. H. D. Maydole: Moral and educational value of athletics. 12. T. N. Carver: Importance of the social survey. 13. E. L. Earp: Need of trained leadership in rural life. 14. D. C. Drew: Home made leaders. 15. M. A. Honline: Religious education in country life. 16. C. O. Bemies: Opportunity of the country pastor to direct social enterprises.

915. **Kent, H. L.** Economy of the one room rural school. Kansas school magazine, 2:175–82, May 1913.
The data contained in this article leads to the conclusion that the one room rural school is not economical. The data is published at this time "because there has been considerable demand for this material to use in school consolidation campaigns."

916. **Matthews, Jessie T.** The county school fair. Normal instructor, 22: 11–12, May 1913.

The county school fair movement and what it signifies.

917. **Miller, Frank W.** Community betterment through cooperation. Ohio teacher, 33: 405–406, April 1913.

Discusses means of cooperation for the betterment of the country school.

918. **Winnebago county, Ill. Superintendent of schools.** Annual report, 1912. [Rockford, Ill., The Clark company press, 1913] 96 p. illus. 8°.

O. J. Kern, superintendent.

Contains: 1. Improvement of school buildings and grounds in country life education, p. 4–28. 2. Play and playgrounds in country life education, p. 29–46. 3. Consolidation of schools in country life education, p. 47–66. 4. Nature study agriculture in country life education, p. 67–95.

Copies of this report are available for free distribution by the Commissioner of Education Washington, D. C.

SECONDARY EDUCATION.

919. **Bryan, W. J. S.** The American high school. School and home education, 32: 330–34, May 1913.

"Address delivered as president before the North Central association of colleges and secondary schools at its eighteenth annual meeting."

Before treating of the American high school, the author first gives a brief synopsis of secondary education in a number of European countries.

920. **Lull, Herbert Galen.** Inherited tendencies of secondary instruction in the United States. Berkeley, University of California press, 1913. [155]–281 p. 4°. (University of California publications. Education. vol. 3, no. 3, pp. 155–281, April 15, 1913)

"List of references cited": p. 279-281.

Includes "A study of the changing relationships between colleges and secondary schools; . . . a study of the effects of the amount and quality of preparatory work required by the colleges upon secondary instruction; a study of the effects of the prevailing conceptions of preparatory education, the effects of the Pestalozzian movement, the effects of textbooks, the effects of the scientific movement upon secondary instruction, and the effects of the Report of the Committee of ten upon secondary instruction: and, finally, the contribution of modern psychology to the solution of the problem."

921. **Meredith, A. B.** Suggestions regarding high school graduation exercises. Educational foundations, 24: 547–50, May 1913.

"These advices were addressed to the superintendents and high school principals of New Jersey. They are worthy of attention throughout the country."—Ed.

Gives two representative programs used last year in New Jersey high schools.

922. **Thornton, William M.** The curriculum of the high school. Alumni bulletin of the University of Virginia, ser. 3, vol. 6: 223–34, April 1913.

The author claims that the high-school man who aims to reform the high school must look to his teachers. "Tampering with the curriculum will prove as futile as foolish."

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

923. **Aguayo, A. M.** Los laboratorios de paidologia y las clinicas psicologicas. Habana, Revista de educacion, 1913. 16 p. 8°.

924. **Belcher, Katherine F.** The sabbatical year for the public school teachers. Educational review, 45: 457–84, May 1913.

Advocates the sabbatical year for public school teachers. Gives a list of cities that have put the plan into operation.

925. **Bell, Arch L.** The merit system in promotion of teachers. Kansas school magazine, 2: 186–93, May 1913.

Describes the merit system used in Ottawa, Kans., and gives a sample of the score card used.

926. **Blount, Alma.** Normal school training for the teaching of English in elementary schools. English journal, 2: 215–20, April 1913.

"A paper read before the Normal school section of the National council of teachers of English, Chicago, November 29, 1912. The writer examined eighty-five normal school catalogues."

927. **Cifarelli, Tommaso.** La crisi della scuola media e la quistione economica degli insegnanti. Rivista pedagogica, 6: 249–279, April 1913.
Discusses the question of scarcity of teachers due to insufficient salaries.

928. **Clement, J. H.** A measuring rod for teaching efficiency. Kansas school magazine, 2: 93–102, March 1913.
Relates the experience of the writer, who is superintendent of schools at Dodge City, Kans., with the use of Prof. E. C. Elliott's "Tentative scheme for the measurement of teaching efficiency."

929. **Darenberg, D.** Der lehrer als romanfigur. Pädagogische zeitung, 42: 306–10, April 17, 1913.
An interesting study of the teacher-type in the modern German novel, showing how the attitude of writers has changed from one of satire to one of respect.

930. **Decker, W. C.** The German elementary school teacher. American education, 16: 376–77, April 1913.
Deals with the training, salaries, etc., of German elementary school teachers.

931. **Drever, James.** The practical training of teachers. Journal of education (London), 45: 355–58, May 1913.
Briefly considers three methods of instruction in the principles of practice teaching: (1) The pupil-teacher system, (2) Practice teaching followed by theoretical training, (3) A combination of the practical and theoretical in the training school.

932. **Hughes, Charles C.** Report on efficiency method for rating teachers. Sierra educational news, 9: 384–89, May 1913.

933. **Lewis, E. E.** Practice teaching in model schools. Elementary school teacher, 13: 434–44, May 1913.
Data obtained in 1909 by the accrediting committee of the California state board of education. A questionnaire was sent to every state normal school in the United States.

934. **Parrott, Rosa B.** The sphere of the normal school. Oregon teachers monthly, 17: 427–30, April 1913.
Paper read before the College and normal section of the Oregon state teachers' association.

935. **Pretzel, C. L. A.** Zur reform der lehrerbildung. Pädagogische zeitung, 42: 201–6, March 13, 1913.
Enumerates and emphasizes teachers' demands for reform in teacher-training.

936. **Schmid, Bastian.** Die prüfungsordnung für das lehramt an den höheren lehranstalten Bayerns. Monatshefte für den naturwissenschaftlichen unterricht, 6: 214–18, heft 4, 1913.
Discusses the new Bavarian teacher requirements with special reference to chemistry, biology, and geography.

HIGHER EDUCATION.

937. **Brown, F. C.** Scholarship and the state. Popular science monthly, 82: 510–15, May 1913.
Urges the necessity of the state doing its part in productive scholarship. Points out the benefits that would accrue in the promotion of research work in state universities.

938. **Cohn, Gustav.** Die hamburgische universität. Internationale monatsschrift für wissenschaft, kunst und technik, 7: 855–74 (col.), April 1913.

939. **Foster, William T.** The college president. Science, n. s. 37: 653–58, May 2, 1913.
Discusses the qualifications necessary for the president of a college. Says that the principle of centralization of responsibility and adequate authority must be reckoned with in all new plans for university control.

940. **Papillon, Thomas L.** What is going on at Oxford. Educational review, 45: 433–43, May 1913.
Discusses proposed reforms in curriculum and administration of the University of Oxford and its component colleges.

941. **Pintner, Rudolf.** Eine amerikanische universität. Neue bahnen, 24: 355–59, May 1913.

Describes the University of Chicago for German readers

942. **Richardson, Charles F.** The problem of waste in the college lecture. School review, 21: 334–43, May 1913.

Writer thinks it unwise to begin the lecture too soon in elementary courses. Advocates combining it, especially in such topics as history or physics, with "assigned collateral readings or even a textbook."

943. **Roosevelt, Theodore.** The high school and the college. Outlook, 104: 66–68, May 10, 1913.

Writer advocates an education related to life, and adapted to the needs of each individual: also a better adjustment between the public high school and the college. Interprets data presented in Bulletin, 1913, no. 7, of the Bureau of education, College entrance requirements.

944. The royal commission on university education in London. Quarterly review, 218: 532–48, April 1913.

945. **Schultze, Ernst.** Die stellung der englischen universitäten zur volksbildung. Pädagogisches archiv, 55: 100–16, heft 2, 1913.

A critical survey of the position of the English universities toward popular education in the nineteenth century. Shows how older universities have radically changed their attitude.

946. **Sherman, Stuart P.** Education by the people. Nation, 96: 461–64, May 8, 1913.

An answer to Prof. E. P. Morris's article on The college and the intellectual life, Yale review, April 1913. Maintains that a state can afford at its universities a liberal arts college of absolutely the first class, and in its high schools ample preparation for it.

947. **Spranger, Eduard.** Wandlungen im wesen der universität seit 100 jahren. Leipzig, E. Wiegandt, 1913. 39 p. 8°.

SCHOOL ADMINISTRATION.

948. Das braunschweigische volksschulgesetz angenommen. Pädagogische warte, 20: 384–89, April 1, 1913.

The new school law adopted for Brunswick replaces the act in force since 1851. New provisions.

949. **Dearborn, Walter F.** The practical results of recent studies in educational statistics. School review, 21: 297–306, May 1913.

Presents data showing maladjustments between schools and departments of study, and instances of inharmonious working.

950. **Fee, Ira B.** What claim has the community upon a superintendent's time outside of the schools. Wyoming school journal, 9: 201–204, April 1913.

951. **Moore, Ernest Carroll.** Indispensable requirements in city school administration. American school board journal, 46: 13–14, 61, May 1913.

"The author of the present article, which formed the basis of an address before the Association of school accounting officers in Philadelphia, February 26, 1913, has had an opportunity, like no other schoolman, of observing the evil effects of municipal interference in school affairs. He writes with the experiences of New York city vividly before him."—Editor.

952. **Rhodes, J. M.** Modern educational ideas in the government of a city as illustrated in Supt. J. M. Rhodes' report, Pasadena, California. Western journal of education, 19: 8–10, April 1913.

The four problems of the schools are "(1) To provide adequately and ideally for the accommodation of every child, (2) To arrange to get every child of school age in school and to keep him there and to limit the number of children who may enroll with any one teacher, (3) To put a superior teacher in charge of every school; and to arrange adequately for her continued growth and development, (4) To relate work of the school to the life of the community; but also to lead the people to a higher and simpler plane of living"

953. **Shull, Charles A.** Recent legislation affecting educational institutions in Kansas. Science, n. s. 37: 622–24, April 25, 1913.

Opens up a new era in educational administration. New arrangement consists in the application of the commission form of government to all of the state-supported educational institutions.

SCHOOL MANAGEMENT.

954. **Alsup, F. E.** What students want vs. curriculum. Missouri school journal, 30: 194–200, May 1913.

955. **Ayres, Leonard P.** The effect of promotion rates on school efficiency. American school board journal, 46: 9–11, May 1913.

"The present article is an excursion into what may be termed 'educational engineering' and shows how small changes in promotion rates have startlingly large results in terms of money and children's time."—Editor.

Reprinted as pamphlet E 130 of the Russell Sage foundation, New York.

956. **Stoner, D. L.** Examinations; their evils and cure. Educator-journal, 13: 377–80, March 1913.

SCHOOL ARCHITECTURE.

957. **Bruce, William C.**, *comp.* High school buildings. Milwaukee, The American school board journal [1913] 198 p. 4°.

A collection of floor plans and photographs of characteristic urban high schools. An effort has been made to select buildings which show a careful adaptation of the plan to the educational work carried on in them, and which, at the same time, follow the best standards of orientation, lighting, etc.

958. **Hennig, ———.** Die Erlweinschen schulbauten in Dresden. Schulhaus, 15: 147–76, heft 4, 1913.

Dresden's beautiful new school buildings are described. Richly illustrated (35 halftones; exteriors, interiors, details, plans).

959. Schools and colleges built to burn. Insurance engineering, 25: 129–65, 182–3, March 1913. illus.

A number of articles on the present fire peril in American schools and colleges, each taking up different phases, thus: Effects of Collinwood fire, exits, State regulation, etc.

SCHOOL SANITATION AND HYGIENE.

960. **Czerny, Adalberto.** Il medico educatore del bambino. Libro per i medici, per le madri, per i maestri. Versione dal tedesco con note originali della dottssa. Angiola Borrino e presentazione al publico italiano del prof. Pio Foà. Torino, Società tipografico-editrice nazionale, 1913. 173 p. 12°.

961. **Dresslar, Fletcher B.** School hygiene. New York, The Macmillan company, 1913. 369 p. illus. 8°.

Presents in a simple and untechnical way some of the hygienic requirements of school life, and suggests, whenever it seems necessary, how these requirements may be put into practice. Not written for the specialist in school hygiene, but for busy teachers. Each chapter is followed by appropriate Topics for investigation, and by Selected references.

962. **Schulz, Otto.** Erster deutscher kongress für alkoholfreie jugenderziehung. Pädagogische zeitung, 42: 285–7, April 10, 1913.

A sympathetic review of the efforts of German schoolmen against alcohol.

963. **Stephani, ——— *and* Wimmenauer, ———.** Schulzahnklinik oder freie zahnarztwahl. Zeitschrift für schulgesundheitspflege, 26: 225–43, April 1913.

Discusses the question whether it is better in oral hygiene in school to organize with school clinic or with private dentists. Writers inclined to be favorable to former method.

964. **Thiele, A.** Die bekämpfung der tuberkulose an den städtischen volksschulen in Chemnitz. Schularzt (Beilage zur Zeitschrift für schulgesundheitspflege) 11: 273–75, April 1913.

A summary of the successful school fight against tuberculosis in Chemnitz since 1900. Methods and organization.

965. **Toepel, Theodore.** The effect of school life on the physical child. Mind and body, 20: 89–93, May 1913.

"Read at the convention of the American physical education association, Newark, N. J., March 1913."

966. **Walker, J. D.** Medical school inspection. Oklahoma school herald, 21: 9–11, May 1913.

"Read before the Pushmataha county teachers' association."

PHYSICAL TRAINING.

967. **Becht, J. George.** A proper playground. Journal of education, 77: 429–30, April 17, 1913.
Gives equipment, supervision, and minimum space per pupil.

968. **Corbin, Alice M.** How to equip a playroom—the Pittsburgh plan. Playground, 7: 8–15, April 1913.

969. **Curtis, Henry S.** Message of the play movement. Journal of education, 77: 455–56, 488, April 24, May 1, 1913.
Address at the North Dakota association.

970. **Dudley, William L.** The proper control of athletics. American physical education review, 18: 209–16, April 1913.
"Paper presented at the seventh annual convention of the National collegiate athletic association, New York, December 27, 1912."

SOCIAL ASPECTS OF EDUCATION.

971. **Curtis, Henry S.** The school center. Survey, 30: 89–91, April 19, 1913.

972. **Hodges, LeRoy.** Winston-Salem plan of training boys for citizenship. North Carolina education, 7: 3–4, May 1913.
The principal characteristics of the plan are "first, cooperation between the public schools and the local board of trade; second, the establishment of a department of government and economics in the city high school; and, third, the formation of a boys' department, or a 'juvenile club,' as it is called, of the board of trade."

973. **Johnson, Eleanor Hope.** Social service and the public schools. Survey, 30: 173–78, May 3, 1913.
Shows what is being accomplished in New York city, Boston, etc. Writer says that the day is fast approaching when "just as surely as social service is an inseparable and honored part of both religious and medical institutions, so it shall be of our educational work."

974. **Kühnert, H.** Universität und settlement. Akademische rundschau, 1: 428–35, heft 7, 1913.
Describes settlement work in England and America and suggests adaptability to Germany.

975. **Voorhees, George L.** Civic service of the social center. Educational bi-monthly, 7: 366–75, April 1913.

CHILD WELFARE.

976. **Astor, Waldorf.** Boy labor and education. National review, 61: 358–66, April 1913.
Author says that the evils of boy labor can be traced to the divorce of working life and education. "A boy's work has got into one groove and his education into another."

MORAL AND RELIGIOUS EDUCATION.

977. **Athearn, Walter S.** Standardizing the Sunday school. Biblical world, 41: 322–26, May 1913.
Gives standards recently adopted by various religious bodies, and also a new "ten-point standard," proposed as a practical basis.

978. **Doggett, L. L.** Materials and methods for religious education among young men and boys. Association seminar, 21: 257–72, April 1913.

979. **Sharp, Frank Chapman.** A course in moral instruction for the high school. 2d ed. Madison, The University, 1913. 244 p. 12°. (Bulletin of the University of Wisconsin, no. 565. High school series, no. 7.)

MANUAL AND VOCATIONAL TRAINING.

980. **Badger, Ozro B.** High school manual training problems for country boys. Manual training magazine, 14: 329–43, April 1913.

Describes conditions in Columbus, Indiana, where the new problem has been "to meet the needs of the pupils from the rural districts." The idea is to help educate these boys back to the farm, enabling them to work more scientifically.

981. **Brereton, Cloudesley.** The character-forming influence of vocational education. Educational review, 45: 501–6, May 1913.

Shows the trend of society under the influence of the industrial system. Predicts a recreation of the old guild system on "a wider and more liberal scale, in which every profession and calling would find representation."

982. **Dean, Arthur D.** The up-bringing of a teacher: an open letter to the manual training teachers. Manual training magazine, 14: 344–51, April 1913.

983. **Dewey, John.** An undemocratic proposal. Vocational education, 2: 374–77, May 1913.

"The short article . . . which we print in this issue first appeared in the American teacher. We believe it deserves a wider reading. The author's reasoning is asserted to be fundamental; if sound, its influence will be far-reaching; if fallacious, it should be answered."—Foreword.

Discusses the evils of a separate board of control for vocational education.

984. **Gayler, G. W.** Vocational training as a preventive of crime. Psychological clinic, 7: 39–46, April 15, 1913.

985. **Hailman, W. N.** Adjustment of the common school curriculum to the vocational needs of to-day. School science and mathematics, 13: 382–91, May 1913.

"Presented at the mid-winter meeting of the Northeastern Ohio section on February 8, 1913."

986. The Hampton institute trade school. I. Carpentry and cabinetmaking. Southern workman, 42: 271–79, May 1913. illus.

987. **Heinzig,** ———. Die handwerkskammern, ihre bedeutung und ihr arbeitsgebiet. Die fortbildungsschule (Beilage zur Pädagogischen zeitung) 8: 57–59, April 24, 1913.

Describes the work of the 72 German boards of trade and chambers of commerce in aid of industrial education.

988. **Johnson, George F.** Toys and toymaking. School-arts magazine, 12: 581–85, May 1913.

Some suggestions for toymaking in the schoolroom.

989. **Kent, Ernest B.** The industrial arts for boys of the seventh and eighth school years. Manual training magazine, 14: 309–21, April 1913.

Gives conditions in Jersey City, N. J. Writer says that while in "the previous grades *industry* has been the subject matter of the course, now for these two years at least, the *boy himself* should become the real subject matter. . . . After the sixth year we should ask, . . . Which boys in a class have latent aptitudes for this or that or the other type of industrial work? Which boys are showing themselves generally unmechanical?" The writer's thesis is that the main duty of the school shop during the sixth and seventh years is "to serve as a laboratory for vocational guidance with respect to the industrial occupations."

990. **Marten, William S.** Inexpensive basketry. Peoria, Ill., The Manual arts press [1913] 45 p. illus. 8°.

References on Educational values of manual training, p. 38–40. Bibliography on Basketry, p. 41–44.

991. **Mühlmann, Karl.** Reiseberichte uber das technische und gewerbliche schulwesen Nordamerikas. Chemnitz, J. C. F. Pickenhahn & sohn, 1913. 70 p. 4°. (Technische staatslehranstalten in Chemnitz. Abhandlungen und berichte. Heft 3, February 1913.)

Narrates observations made during an official tour of inspection in the East and Middle West, in April, May, and June 1912.

992. **Nearing, Scott.** Public schools that are making good: High schools that are in step with life. Ladies' home journal, 30: 10, 75–76, May 1913.

Describes work in Newton, Mass.; Gary, Ind.; Grand Rapids, Mich.; New York city, etc. Advocates vocational education.

993. **Prosser, Charles A.** The meaning of industrial education. Vocational education, 2: 401–10, May 1913.

This article is condensed from the address delivered at the December convention of the Indiana state teachers' association.

994. **Scott, Jonathan F.** The decline of the English apprenticeship system. Elementary school teacher, 13: 445–54, May 1913.

Writer says that it is mainly "to the public school that we must look for a solution of the problem of industrial education." Sketches the history of the craft guild systems.

995. Some public schools that are not failures. III. The Newton vocational school. Popular educator, 30: 485–89, May 1913.

996. **Wigge, H.** Welche gefahren liegen für unsere volksschule in der bevorzugung der nebenfächer? Pädagogische warte, 20: 430–39, April 15, 1913.

Opposes industrial and other branches in the school on the ground that they interfere with the spirit and organization of the instruction.

VOCATIONAL GUIDANCE.

997. **Ayres, Leonard Porter.** Psychological tests in vocational guidance. New York city, Division of education, Russell Sage foundation, 1913. 6 p. 8°. (Russell Sage foundation. Pamphlets. E128.)

Reprinted from the Journal of educational psychology, April 1913.

998. **Bloomfield, Meyer.** The vocational counselor in action. Survey, 30: 183–88. May 3, 1913.

Gives a digest of the past performances and future plans of the Vocation bureau of Boston.

999. **Boston, Mass. Vocation bureau.** Record of the Vocation bureau of Boston, 1913. Boston, Mass., 6 Beacon street, 1913. 28 p. 8°.

Meyer Bloomfield, director.

The summer school course in vocational guidance to be given by Harvard university this year may be found on pages 11–12. Other extension courses in vocational guidance offered by Columbia university and by the University of Missouri are outlined on pages 22–23.

1000. **Rodman, Cornelia Benedict.** The work of the vocational councilor. Journal of education, 77: 483–84, May 1, 1913.

The author is the vocational councilor at the Somerville, Mass., Trade school for girls.

1001. **Weaver, Eli W.** Getting in touch with the employer. Journal of education, 77: 396–98, April 10, 1913.

"Address before National conference on vocational guidance at New York."

AGRICULTURAL EDUCATION.

1002. **Putnam, Helen C.** Children's gardens and life. Child-welfare magazine, 7: 158–60, 213–15, 242–45, 296–98, 320–23, January to May 1913.

Gives the various steps in gardening, showing how it brings about normal, easy opportunities of helping children to intelligent as well as wholesome ideas of the renewal of life, heredity, environment, physiologic processes, and even anatomy. The properly trained teacher can coordinate the observations made in gardening with human life.

1003. **Sipe, Susan B.** The teacher and the school garden. Kindergarten review, 23: 545–53, May 1913. illus.

School garden work as carried on in Washington, D. C.

1004. **Snedden, David.** The agricultural school. American school board journal, 46: 17, 56, May 1913.

"Of the industrial subjects which have recently been added to the curriculum none is more important to a larger number of children than agriculture. Dr. Snedden discusses the fundamental principles which must be observed in making this important study a part of the public-school system in a most popular manner that cannot fail to interest school-board members."—Editor.

HOME ECONOMICS.

1005. **Colwell, Rachel.** A brief description of the way in which domestic science is being introduced in some of the schools of West Virginia. West Virginia educator, 7: 12–13, May 1913.
Describes equipment, etc.

1006. **DeGarmo, Mary E.** School credit for home industrial work through the partnership report card. Atlantic educational journal, 8: 344–46, May 1913.

1007. **Kemsies, Ferdinand.** Zur psychologie und pädagogik der hausarbeiten. Zeitschrift für pädagogische psychologie, 14: 193–206, April 1913.
A timely discussion of homework in its relation to the pupil's waking and working hours.

1008. **Kittredge, Mabel H.** Housekeeping centers in settlements and public schools. Survey, 30: 188–92, May 3, 1913.
Shows the great popularity in New York city of the housekeeping center.

1009. **Lewis, Adah.** Equipment of a domestic science laboratory. Western school journal, 29: 132–33, May 1913.
Gives itemized cost of individual and general equipment, and expense of maintenance of domestic science work in Kansas high schools.

MEDICAL EDUCATION.

1010. **Bevan, Arthur Dean.** The past and future of medical colleges in America. American educational review, 34: 309–12, March 1913.

EDUCATION OF WOMEN.

1011. **Reichl, —.** Können wir auf die obligatorische mädchenfortbildungsschule verzichten? Frauenbildung, 12: 187–94, heft 4, 1913.
Argues the economic and social necessity for the compulsory continuation school for girls.

1012. What we are trying to do. World's work, 26: 50–58, May 1913.
Symposium by 35 teachers of the Washington Irving high school, New York city. Efforts "to make healthy and successful women of city-bred girls."

EXCEPTIONAL CHILDREN.

1013. **Breitwieser, J. V.** The case of the gifted child. Colorado school journal, 28: 20–22, April 1913.

1014. **Flexner, Mary.** The visiting teacher in action. Survey, 30: 179–82, May 3, 1913.
To the visiting teacher is assigned "the group called the *difficult* children, and it is her aim to discover, if possible, the cause of the difficulty which manifests itself in poor scholarship, annoying conduct, irregular attendance, or the need of or desire for advice on some important phase of life." Gives résumé of cases handled by the seven visiting teachers maintained in New York by the Public education association.

1015. **Herndon, Carrie P.** The exceptional child and what we are doing for him.—II. Normal instructor, 22: 22, May 1913.
In the April issue the physically exceptional child was discussed. This number deals with the mentally exceptional.

1016. **New Orleans. Public school alliance.** Exceptional children in the public schools of New Orleans. A report of the committee of the Public school alliance, March, 1913. New Orleans, Public school alliance, 1913. 36 p. 8°.

1017. **Shaer, I.** Special classes for bright children in an English elementary school. Journal of educational psychology, 4: 209–28, April 1913.
"A discussion of the principles of promotion in primary schools."

LIBRARIES AND READING.

1018. **Comstock, Sarah.** Eight million books a year. World's work, 26: 100–8, May 1913.
Describes work of the New York public library, its services to foreigners, etc.

1019. **Dracass, Carrie E. Tucker.** Plans for the future of Chicago high-school libraries. Educational bi-monthly, 7: 295–304, April 1913.
Read before the English section of the Chicago high and normal school association, May 11, 1912.

1020. **Herbert, Clara W.** Children's reading: The right book at the right time. Home progress, 2: 28–31, May 1913.

1021. **Pryne, Marion.** Library work in the high school. Sierra educational news, 9: 373–77, May 1913.

PERIODICALS INDEXED IN THIS NUMBER.

Akademische rundschau, Leipzig, Germany.
Allgemeine deutsche lehrerzeitung, Leipzig, Germany.
Alumni bulletin of the University of Virginia, Charlottesville, Va.
American education, 50 State street, Albany, N. Y.
American educational review, 431 S. Dearborn street, Chicago, Ill.
American physical education review, 93 Westford avenue, Springfield, Mass.
American school board journal, 129 Michigan street, Milwaukee, Wis.
Association seminar, Seminar publishing company, Springfield, Mass.
Atlantic educational journal, 19 W. Saratoga street, Baltimore, Md.
Biblical world, University of Chicago press, Chicago, Ill.
Century magazine, Union square, New York, N. Y.
Child-welfare magazine, 227 S. Sixth street, Philadelphia, Pa.
Colorado school journal, 230 Railway Exchange building, Denver, Colo.
Deutsche schule, Leipzig, Germany.
Éducateur moderne, Paris, France.
Education, 120 Boylston street, Boston, Mass.
Educational bi-monthly, Board of education, Chicago, Ill.
Educational foundations, 31–33 E. 27th street, New York, N. Y.
Educational review, Columbia university, New York, N. Y.
Educational times, London, England.
Educator-journal, 403 Newton Claypool building, Indianapolis, Ind.
Elementary school teacher, University of Chicago press, Chicago, Ill.
English journal, University of Chicago press, Chicago, Ill.
Frauenbildung, Leipzig, Germany.
Geographischer anzeiger, Gotha, Germany.
History teacher's magazine, McKinley publishing company, Philadelphia, Pa.
Home progress, Riverside press, Cambridge, Mass.
Insurance engineering, 80 Maiden lane, New York, N. Y.
Internationale monatsschrift für wissenschaft, kunst und technik, Berlin, Germany.
Journal of education, 6 Beacon street, Boston, Mass.
Journal of education, London, England.
Journal of educational psychology, Warwick & York, inc., Baltimore, Md.
Kansas school magazine, Emporia, Kans.
Kindergarten review, Milton Bradley co., Springfield, Mass.
Ladies' home journal, Curtis publishing company, Philadelphia, Pa.
Lehrerin, Leipzig, Germany.
McClure's magazine, 4th avenue and 20th street, New York, N. Y.
Manual training magazine, Manual arts press, Peoria, Ill.
Mathematics teacher, 41 N. Queen street, Lancaster, Pa.

Mind and body, Herold building, Milwaukee, Wis.
Missouri school journal, Jefferson City, Mo.
Monatshefte der Comeniusgesellschaft, Berlin, Germany.
Monatshefte für den naturwissenschaftlichen unterricht, Leipzig, Germany.
Nation, Box 794, New York, N. Y.
National review, London, England.
Neue bahnen, Leipzig, Germany.
Normal instructor, Dansville, N. Y.
North Carolina education, Raleigh, N. C.
Nuovi doveri, Rassegna di pedagogia, Palermo, Italy.
Ohio educational monthly, 55 East Main street, Columbus, Ohio.
Ohio teacher, Box 326, Athens, Ohio.
Oklahoma school herald, Oklahoma City, Okla.
Oregon teachers monthly, Salem, Oreg.
Outlook, 287 4th avenue, New York, N. Y.
Pädagogische warte, Leipzig, Germany.
Pädagogische zeitung, Berlin, Germany.
Pädagogisches archiv, Braunschweig, Germany.
Parents' review, London, England.
Pennsylvania school journal, Lancaster, Pa.
Playground, 1 Madison avenue, New York, N. Y.
Popular educator, 50 Bromfield street, Boston, Mass.
Popular science monthly, Sub-station 84, New York, N. Y.
Primary education, 50 Bromfield street, Boston, Mass.
Progressive teacher, Nashville, Tenn.
Psychological clinic, Woodland avenue and 36th street, Philadelphia, Pa.
Psychological review, 41 N. Queen street, Lancaster, Pa.
Quarterly review, London, England.
Revue de l'enseignement des langues vivantes, Paris, France.
Revue universitaire, Paris, France.
Rivista pedagogica, Rome, Italy.
Rural educator, Ohio State university, Columbus, Ohio.
School and home education, Bloomington, Ill.
School-arts magazine, 120 Boylston street, Boston, Mass.
School news and practical educator, Taylorville, Ill.
School review, University of Chicago press, Chicago, Ill.
School science and mathematics, Mount Morris, Ill.
School world, London, England.
Schulhaus, Berlin, Germany.
Science, Sub-station 84, New York, N. Y.
Sierra educational news, 50 Main street, San Francisco, Cal.
Southern workman, Hampton, Va.
Survey, 105 E. 22d street, New York, N. Y.
Texas school journal, 1927 Main street, Dallas, Texas.
Vocational education, Manual arts press, Peoria, Ill.
West Virginia educator, Charleston, W. Va.
Western journal of education, 324 Phelan building, San Francisco, Cal.
Western school journal, Topeka, Kans.
Westminster review, London, England.
Wisconsin journal of education, Parker educational co., Madison, Wis.
World's work, Doubleday, Page & Co., Garden City, N. Y.
Wyoming school journal, Laramie, Wyo.
Zeitschrift für geschichte der erziehung und des unterrichts, Berlin, Germany.
Zeitschrift für pädagogische psychologie, Leipzig, Germany.
Zeitschrift für schulgesundheitspflege, Leipzig, Germany.

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